FLORIDA HEALTH NOTES



UME 66 - NO. 1
UARY 1973

Tuberculosis Control - A Success Story

FLORIDA STATE LIBRARY



FINDING TUBERCULOSIS (Cover photo) - Tuberculosis skin testing is a simple, reliable means of determining if a person has tuberculosis. A red, swollen spot may indicate that he is positive for the disease.

CHEST X-RAY - A technician in an X-ray clinic positions her subject (left) and takes the X-ray picture from behind a protective shield (below). Over 711,000 70mm X-ray screenings were made in Florida in 1971.



A Success Story – Tuberculosis Control

Once upon a time there was a kingdom that was visited by many problems, including a dreadful plague. No one knew where the plague came from. Despite the efforts of all the wise men, it crept through the crowded, industrial cities - where workers toiled long hours in sweatshops, lurked in fashionable neighborhoods - where the socialites dwelt in luxury, and stalked through the homes of storekeepers and bankers.

Those workers who were recruited from rural areas of the kingdom to work in the cities quickly fell victim to the plague and became like the other sufferers - pale, lank, narrow-chested, and hollow-eyed - ghosts of their former selves. Those infected with the plague resembled the "walking dead" and hundreds of thousands of persons faded away and died with painful coughs, bloody sputum, fever, and other maladies.

The kingdom was not the only one visited by the "white plague." Other nations and countries felt the cold, chilling finger of death, but despite the efforts of physicians and scientists, there was apparently no way of stopping the insidious advances of the disease.

This is no fairy tale. The plague was tuberculosis - also known as "phthisis" (a Greek word that means "to waste away") or consumption. If the disease developed rapidly, it was known as "galloping consumption."

Because of scientific advances, an understanding of the "killer," and the discovery of new drugs, the days of the "white plague" are gone. But tuberculosis is still around today. It is the same infectious disease but it can be cured. The control of tuberculosis during the past few decades has been a real success story.

This issue of **Florida Health Notes** will tell you about tuberculosis - the symptoms, how it is spread, how it can be detected, and how the disease was a symbol of a way of life. We will tell you about sanatoria that once were the centers of treatment, about

the new drugs that allow patients to leave the hospitals sooner than before, and the roles the Division of Health of the Department of Health and Rehabilitative Services and its partners - the county health departments - play in controlling this tragic killer.

What is Tuberculosis?

Tuberculosis is a disease that you can get from an infected person. It is one that is breathed into the lungs. When it gets a foothold, it can cause damage to the lungs, other organs and other parts of the body.

Man's lungs are a pair of conical shaped organs that occupy the cavity of the chest. He uses these for respiration (breathing) - an action in which the blood takes on oxygen and discharges carbon dioxide and other impurities. The lungs consist of nearly a billion microscopic balloon-like air sacs that make the lungs appear somewhat like large sponges.

When tuberculosis germs enter the body for the first time, the infection is usually so mild that it causes no illness and heals without really being noticed. It may be mistaken for a "cold" or the "flu." It can produce a very serious illness (meningitis) in infants or go into chronic tuberculosis in young adults.

The first spots of primary tuberculosis in the lungs are so small that they cannot be detected by X-ray and the infection can only be suspected by a "skin tuberculin test." More will be said about this test later. The spots in the lungs may grow in size and show up as white spots in the X-ray. The spots may heal, leaving only small scars.

FLORIDA HEALTH NOTES

Published monthly by the Division of Health (Wilson T. Sowder, M.D., M.P.H., Director) of the Florida Department of Health and Rehabilitative Services. Publication office, Box 210, Jacksonville, Florida 32201. Second Class Postage paid at Jacksonville, Florida. Printed since 1892, this publication is for individuals and institutions with an interest in the state's health program. Permission is given to quote any story providing credit is given to the Division of Health. Editor: Robert A. Schoonover, M.A.

VOLUME 65, NO. 1 JANUARY, 197

Regardless of the age at which it occurs, primary tuberculosis often heals without being detected. Its principle importance is that the germs are spread through the blood stream to various organs, thus setting the stage for the development of chronic tuberculosis months or even years later.

Even though the primary infection heals, some germs usually remain in the body - often in small spots at the top of the lungs. The germs are dormant but still alive, like grass and trees which appear dead in winter but come alive in the spring.

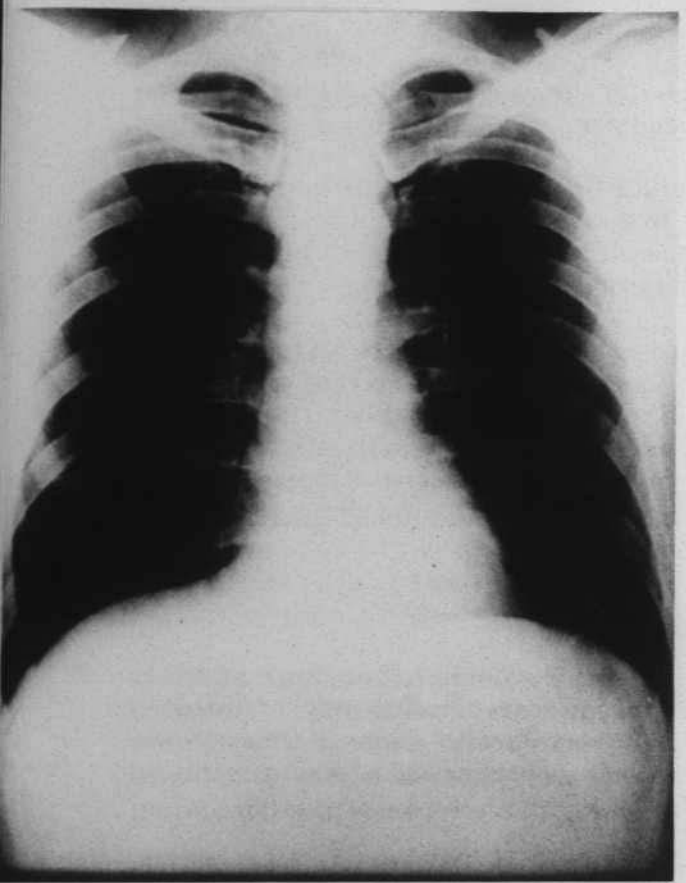
While the lungs are the most common location of tuberculosis, the effects are essentially the same, regardless of the organs involved. Actual destruction of part of the organ which may occur months, years or even decades after the original infection, forming "rotten spots" with liquid centers (cavities) and dense scarring. The tubercle bacilli are capable of destroying large masses of tissue.

How Tuberculosis Spreads

Tubercle bacilli are minute rods so small that large numbers of them can be packed inside the microscopic white cells of the blood and body tissue. They multiply very slowly - some 20 times slower than most other microorganisms - producing a new generation about twice a day.

Following the primary infection, the bacilli are immediately engulfed by the white cells and they start multiplying within them. The tubercle bacilli seem to cause little damage at first, but within several weeks or a few months, the continued presence of the bacilli in ever-increasing numbers brings about a condition in which the tissue cells become hypersensitive to the bacilli and their by-products. The cells are killed by mere contact with them. Through further spreading of the bacilli, the cells break up into a mass of cheese-like debris. When the lesion breaks open into a bronchus, the discharge of its softened contents leaves a hole - a cavity - in the lung.

Practically the only way of contracting tuberculosis in the United States today is by breathing the germs into the lungs in tiny drops of water sprayed by a person with active tuberculosis in the



NORMAL CHEST - This individual's lungs are free of tuberculosis. No calcium spots show among the microscopic air sacs.

chronic contagious stage. The droplets may be spread when an infected person sneezes, coughs or talks. The ones that are dangerous are actually invisible and are so small that five million could fit into a space the size of the head of a pin. They are only dangerous indoors and then only for a few hours after they are produced.

As the germs grow in the lungs they may damage some spots so severely that they liquify in the center. When this happens, the liquid may escape through a bronchial tube, forming a hole or "cavity" in the lung. Just as the rot in a tomato, some progress slowly and are not serious, others progress rapidly. A spot which has given no trouble for years may suddenly begin to develop swiftly and produce a cavity. The liquid material which escapes from a cavity in the lung, or liquified lymph nodes, carry tuber-

culosis germs to other parts of the lung and out into the air to endanger other people.

Instead of becoming generalized, the disease can be limited to certain parts of the body:

* inflammation of the membrane surrounding the brain (meningeal tuberculosis);

* destruction of the kidney tissues (renal tuberculosis);

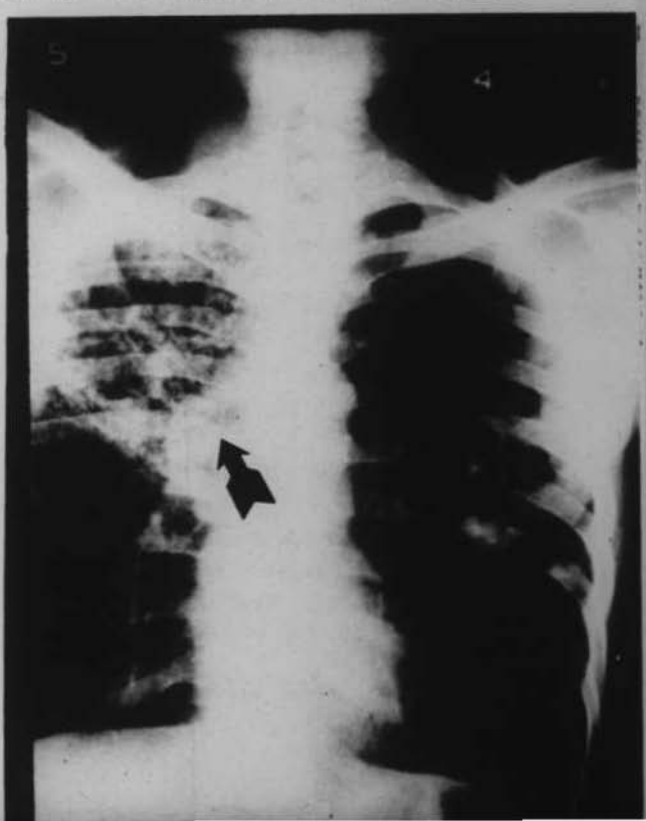
* the infirmity of the hunchback called Pott's Disease (tuberculosis of the spine);

* lupus (tuberculosis of the skin); and

* every part of the body is known to have been affected.

Chronic Tuberculosis

In some young adults, primary tuberculosis occasionally fails to heal and goes directly into chronic tuberculosis with serious



INFECTED LUNGS - The right upper lobe of this person's lungs has a large cavity from tuberculosis (indicated by arrow). There are also spots in the left lung where tuberculosis has gained a foothold.

destruction of the lungs. More often, chronic, or secondary, tuberculosis develops when dormant germs "wake up" after "sleeping" for many years. This often happens late in life when other illnesses have lowered the body's defenses. But it may occur during the stress of pregnancy or even in healthy, young working men.

The long interval which may occur between the primary infection and the development of chronic tuberculosis led some people to believe that chronic tuberculosis was caused by a second infection. Now we know that usually the infection is "sleeping" or dormant and the development of the disease in many adults is the result of a "waking up" of the germs.

Who is Susceptible to Tuberculosis?

It remains a mystery why dormant spots of tuberculosis occasionally develop into active disease in adults sometimes years after the primary state. However, it occurs more commonly in situations in which the defenses of the body are down:

* in children, who are generally more susceptible to infectious diseases than adults;

* in persons who are overworked or under stress;

* in old age when general health is declining;

* in those who abuse alcohol;

* in persons with diabetes;

* in those with silicosis (dust in the lungs);

* in persons receiving cortisone or a similar drug for asthma, arthritis, etc.; and

* those who have parts of their stomachs removed.

Tuberculosis still is more prevalent in cities than rural areas; in crowded slums than spacious suburbs; among prisoners, industrial workers, and institutions and wherever living quarters are crowded.

The Symptoms - A Cough and Blood

Almost half of the individuals discovered to have active tuberculosis by routine surveys are usually without symptoms. Yet the disease is often in a moderate, advanced or far advanced stage at the time of diagnosis.

No one really knows when Mr. B became infected with tuberculosis. The primary stage produced no ill effects. Usually the symptoms develop so gradually that they may not be noticed for a long time. Mr. B sought treatment a long while after he began to cough, have night sweat, became breathless, and have pain and fever. Only when he woke one morning to find blood on his pillow and discovered that he was spitting up blood did he seek help. All of these symptoms have been associated with pulmonary tuberculosis from the earliest times. Tubercles, cavities, and other lesions have been the telltale traces of the disease wherever autopsies have been performed.

In advanced stages, the cough was so incessant that Mr. B scarcely had time to breathe. His cheeks were livid crimson; his eyes sunk into his skull; his body was wasted away to a mere skeleton. Tuberculosis in its early stages is easy to cure. When it has neither been discovered in due time, nor treated properly, it is more difficult to cure.

Bovine Tuberculosis

A source of tuberculosis once common in the United States was tuberculosis in cattle. This was a serious problem in man, especially among children who acquired the disease through milk. Campaigns for the pasteurization of milk and the eradication of bovine tuberculosis were necessary. Tuberculin testing of cattle began in 1917. Eight per cent of the cattle initially tested were found to be infected. Since then all cattle are tuberculin tested and all tuberculin positive cattle slaughtered.

As a result of this practice, human disease caused by bovine tubercule bacilli is extremely rare in this country. Hundreds of thousands of cattle are tested for tuberculosis in Florida each

year by the U. S. Department of Agriculture and the State Department of Agriculture and Consumer Service. In Florida there were 6,800 cattle reactors among the 305,000 tested in 1971.

Cats, dogs, parrots, pigs, parakeets, and chickens are known to contract tuberculosis from other animals. Wild animals, particularly monkeys, are known to suffer from the disease. None of these is an important source of human infection.

A Disease of the Romanticists

Epidemics have often been more influential than statesmen and soldiers in shaping the course of political history. Some diseases, such as bubonic plague, yellow fever, small pox, and cholera may have colored the moods of civilizations. Because these diseases were part of every day life, their roles were rarely emphasized by historians. Some aspects of the medical past - which have been ignored by history - have been of greater significance than other more celebrated events.

The bubonic plague played a great part in the shaping of European history. The spread of syphilis and the dissolution of morals at certain periods of the Renaissance were of great importance in the arranging of national borders. Tuberculosis' role in more recent history was less distinct even though it was profound and lasting.

Bone lesions from tubercle bacilli have been recognized in the mummified body of a priest of Ammon, exhumed from a tomb of the 21st Egyptian Dynasty, 1000 B.C. Other excavations in the same area unearthed so many bodies with tuberculosis lesions that archaeologists believe that a large tuberculosis sanatorium may have existed in ancient Egypt.

Vivid accounts of tuberculosis of the lungs date back to Hippocrates, 400 B.C., and the Greek word, **phthisis,** (to shrivel up and waste away) has its English counterpart in **consumption,** which was until recently a common term. References to tuberculosis have been consistently found in the writings of all urbanized people; while it is rarely found in the Bible or other writings of a predominately pastoral society.

Ancient drawings, pottery, and statuary obtained from many parts of the world represented humans with physical deformations characteristic of tuberculosis - proving that the disease has been the cause of human illness for a long time.

In the Fifth Century, the French king, Clovis, and later English kings, claimed the power to cure scrofula, a form of tuberculosis



DYING HERO - People with consumption (tuberculosis) lived in the romantic literature of the 19th Century. Treatment in those days was uncertain and usually unsuccessful.

---

in which the neck glands swell and drain. Accounts have come down of illnesses of distinct and seemingly unrelated parts of the body which are now known to have been tuberculosis in a variety of forms.

The disease reached epidemic proportions in Europe and North America during the 19th Century and was recognized as a major cause of death. The prevalence of tuberculosis influenced even poetic and artistic ideals. Romantic literature portrayed heroines as delicate, languid, prone to fainting - or coughing - spells. Heroes were pale, brave, idealistic and died before the age of 30. The falling leaves of autumn were portrayed as the last days of a consumptive's life and the aim of the romanticists was to die with tuberculosis. One musician in **Scenes de la Vie de Bohème,** by Murger, said, "I would be as famous as the sun if I had a black suit, wore long hair, and if one of my lungs were diseased."

Even fashion reflected the prevalence of phthisis. The high collars worn by men seem to have originated to hide the swollen lymph glands of the neck. A peculiar ideal of feminine beauty was marked by languid pallor with the absence of rouge and much whitening powder. Women of the period envisioned themselves as languishing beauties in vaporous muslins; sheer white materials of cotton, linen, and silk became the rage - regardless of the season.

Many prominent individuals were tuberculous - among them John Keats, Percy Shelley, Elizabeth Browning, the Brontë sisters, Federic Chopin, Robert Louis Stevenson, and Ralph Waldo Emerson. Because so many people had the disease, some people concluded that genius and tuberculosis were closely linked - but this had no basis for fact. The fever of the disease, the use of opium to control pain or cough, and the stimulation of a limited, romantic outlook of life may have caused those with creative ability to burn with unusual intensity. But the disease was not the source of their genius. Tuberculosis reached all levels of society and its seedbeds were the slums and herds of people exposed to undue hardship. Workers engulfed in the Industrial Revolution were exposed to tuberculosis. Those who were recruited from the rural areas succumbed quickly.

For those who could afford to travel, the warmer climate seemed to be the answer to the melancholy skies and cold damp gloom of Northern Europe and the United States. People of wealth made great pilgrimages to Italy and the Mediterranean Coast - the shrines of health, joy, and illusion. Here they maintained their customary life of parties, theater, operas and concerts.

Florida, the Caribbean Islands, and later the Southwest, provided the "shrine" for Americans.

The first hospital for tuberculosis patients was started in Rheims, France, in 1645 to care for those individuals who had failed to be cured by the touch of the king. By 1700, physicians had learned to diagnose the disease before ulceration and blood spitting had developed and they considered food and fresh air as a course of treatment for the disease.

By this time, many cities in Europe had passed laws making isolation of patients with tuberculosis mandatory and calling for the burning of patients' personal effects and clothing.

An obscure English physician, Benjamin Marten, in 1722, first promoted the germ theory; but it was not until 1882 that a German physician, Robert Koch, discovered the tubercle bacilli and removed the phantom from the closet. The diagnosis of tuberculosis was advanced greatly when a French physician, Laenneck, made the first stethoscope.

Cold Air and Rest

Many old wives' tales surround early treatment of tuberculosis. Some of these strange cures included:

* daily feedings of an extract made of mutton suet and milk;

* "antipulmonic water" containing chiefly calcium phosphate; and

* the exhalations of a cow shed.

Various schools promoted the seashore versus the mountains, the hot and dry desert versus the cool Northern climate; absolute immobility versus physical exercise.

Strictly by accident the medical profession realized that fresh air in a sanatorium was perhaps the best treatment for tuberculosis. Where early treatment had advocated keeping the tuberculosis patients in closed rooms for fear of their catching colds,



FRESH AIR - Many Northern states and European countries had sanitoria in the mountains where patients were treated for tuberculosis with fresh air and rest. Florida's answer to the isolation of tuberculosis patients was the Burr cottage.

"sanitary awakening" advocated that pure air, water, and food were essential to healthy living. In the middle of the 19th Century, sanatoria opened in Europe and the mountains of North America where patients were kept out of doors - even during winter months. In some cases, rest and fresh air performed "miracles."

These "miracles" sometimes took years to arrest the disease in tuberculosis patients. In addition, pneumothorax (collapse therapy) to rest the tuberculous lungs was practiced. The treatment called for isolation in hospitals and specialized nursing care.

Florida had no such cool climate and perhaps this is one reason why tuberculosis hospitals were late in coming to the Sunshine State.

In the early days of the old State Board of Health, it warned against tuberculosis and those who were infected with consumption. The disease was considered as "incurable" by some physicians and isolation of patients and disinfection of homes was considered the best policy.

Florida Health Notes, in November 1893, noted: "As the coming of the swallow betokens the approach of spring, so surely does the first chill winds of autumn foreshadow the flight southward of the pulmonary invalid." Advice was given to those Floridians who would play host and hostess to the consumptives. **Florida Health Notes** urged Floridians and the state government to

* notify and register with health authorities all cases of tuberculosis which had arrived in the infectious stages;

* disinfect all houses in which tuberculosis patients lived and the recording of such action in an open record;

* establish special hospitals for the prevention of tuberculosis; and

A Story of Cooperation

The first state-wide efforts toward the collecting and disseminating of information concerning the cause, treatment, and prevention of tuberculosis were made by the Florida Anti-Tuberculosis Association (now Florida Tuberculosis and Respiratory Disease Association) which was formed in 1916. Since that time the old State Board of Health (now Division of Health) has cooperated with this voluntary health agency to combat tuberculosis. Together they have sponsored clinics, promoted X-ray screening programs (with the Association providing education, publicity, and volunteers) and cooperated on Task Forces, committees and seminars. Over the years the Association has recruited blood donors for patients undergoing surgery in tuberculosis hospitals, furnished audiovisual materials, and aided in promoting tuberculosis legislation.

* inspect dairies, slaughter-houses, and extermine tuberculosis among dairy cattle.

Discovery and Diagnosis

Physicians knew that isolation was necessary and Florida's answer was the "Burr Cottage." Before the days of the state hospital, the isolation of tuberculosis patients was a problem. A Dr. Burr suggested tiny cottages in the backyards of Florida homes that were half walled and half screened. These were equipped with "lift-up" sides that could be closed during inclement weather.

The advantages of these cottages were that infectious patients could be kept close to their families - yet with no danger of infecting them - if their families could stay away. One public health nurse found a tuberculosis mother enjoying the use of the family home while her four youngsters were locked in the Burr cottage. The physician had told her she needed rest.

State hospitals came to Florida long after states with cool, dry mountain air had established sanatoria - both state and privately operated. The Florida climate was considered not suitable and patients went to the mountains or the desert for treatment; or did the best they could in wards and rooms allocated to them in county hospitals.

The State Tuberculosis Board was established in 1927, but was hampered by the lack of funds. It did not open the first hospital until 1938. This was the Central Florida Tuberculosis Hospital in Orlando. It had 400 beds which were soon filled. World War II came along and the need for building more hospitals was postponed because of the war effort. After the war, interest was revived and the state took over two former Armed Forces hospitals. Between 1950 and 1952, three more state tuberculosis hospitals were opened at Lantana, Tampa, and Tallahassee. The 1,850 beds in these hospitals were quickly filled and more hospitals would have been built were it not for new drugs and new techniques in the treatment of tuberculosis that shortened the hospital stay of infectious patients.

By 1969, all of the local and state hospitals, with the exception of those at Lantana and Tampa were closed. In that year, the re-

organization of the state government abolished the State Tuberculosis Board and placed the operation of the state tuberculosis hospitals under the Division of Health's Bureau of Tuberculosis Control.

Today hospitalization is usually recommended for a new active case of tuberculosis because

* full facilities of a modern hospital are needed to be sure of the diagnosis and to detect other diseases. Florida's state tuberculosis hospitals are complete treatment centers;

* the medicines occasionally produce side effects which can be detected and corrected earlier if the patient is in the hospital;

* the family and friends need protection from "catching the germs" until they are controlled by the medicines; and

* the patient needs to learn about his disease and the need for long-term treatment after discharge.

Where hospital confinements could once last for several years, modern drug therapy has cut the length of hospital stays to 90 days or less. Because of this, the two state tuberculosis hospitals are operating today with less than half of their beds occupied.

Both hospitals have complete surgical units. But modern chemotherapy has resulted in a decreased need for surgery. Once 45 per cent of the patients received some type of surgery, such as pneumothorax, rib removal or lung tissue resection. Now only two to four per cent of the patients need surgery.

Drug Therapy

The drugs that changed the treatment of tuberculosis first appeared on the markets in 1948. The latest drug, Refampin, was released in July 1971. Now there are 11 different chemotherapeutic agents that are known to be effective in the treatment of tuberculosis.

Florida's state tuberculosis hospitals have played a role in drug therapy. For the past 18 years they have been cooperating with the U. S. Public Health Service in research projects.

When a patient is admitted to the tuberculosis hospital with an active case, he goes through an evaluation to determine if there are other diseases present that may be serious. This is necessary because most patients today are in the older age groups.

The diagnosis involves a number of laboratory tests, including:

* sputum smears. Phlegm, which is coughed up spontaneously or with the assistance of "aerosol vapor," is smeared on a glass slide and stained to make the tuberculosis germs visible under a microscope.

* cultures for tuberculosis germs. Tubercule bacilli from a sputum specimen, bronchial washing, urine specimen, or other body source are grown in a suitable medium. This method, while more sensitive than the smear, takes from four to six weeks because the germs grow very slowly.



STATE HOSPITAL - Florida has state hospitals for the treatment of tuberculosis at Tampa and Lantana. Modern chemotherapy has reduced the length of hospitalization for most patients.

* tests to identify the tuberculosis germ. Since there are other germs which resemble the tubercle bacilli, laboratory tests must be done to identify the germs.

* effect of drugs on tuberculosis germs. If the germ has a resistance to a certain drug, others must be tried.

Each patient, once he has been diagnosed, is put on chemotherapy. Usually he stays in the tuberculosis hospital where the physicians can watch for side effects to the medicine. Once the patient is making progress toward recovery, he may be allowed to return home. Once he is at home, he must keep taking his medicine - usually for two years or more.

Although the patient is usually discharged when the sputum slides are negative, he still has the germs in his body - very much alive and capable of causing more trouble. Solid healing requires months or years of treatment. Most of it can take place after the patient is discharged from the tuberculosis hospital.

Follow-up visits to county health department clinics or physicians' offices are made at regular intervals. At first the visits may be monthly. Then the patient comes in at longer intervals. Sputum cultures are made at each visit and an X-ray is taken when needed to check on the patient's progress. Some patients may not need to go to the hospital to start treatment. These will be seen more frequently in the health department at first — some daily or weekly for the first few months.

The Health Agency's Concern

When the State Board of Health (now Division of Health) was established in 1889, tuberculosis was a world-wide scourge. Statistics were not available as to its prevalence in Florida, but elsewhere in the nation, death rates of 200 per 100,000 population were not uncommon.

Although Dr. Joseph Y. Porter, the first state health officer, was concerned about tuberculosis and expressed this concern in his writings, it was not until 1920 that a program of clinics and case and death registries was planned. The clinics were carried out with the cooperation of the Florida Tuberculosis and Health

Association and the Florida Federation of Woman's Clubs. Three nurses were employed to visit communities and organize clinics.

These clinics were held in schools, courtrooms, women's clubs, and American Legion halls. X-ray services were not available so physicians who donated their services attempted diagnosis on the basis of a physical examination.

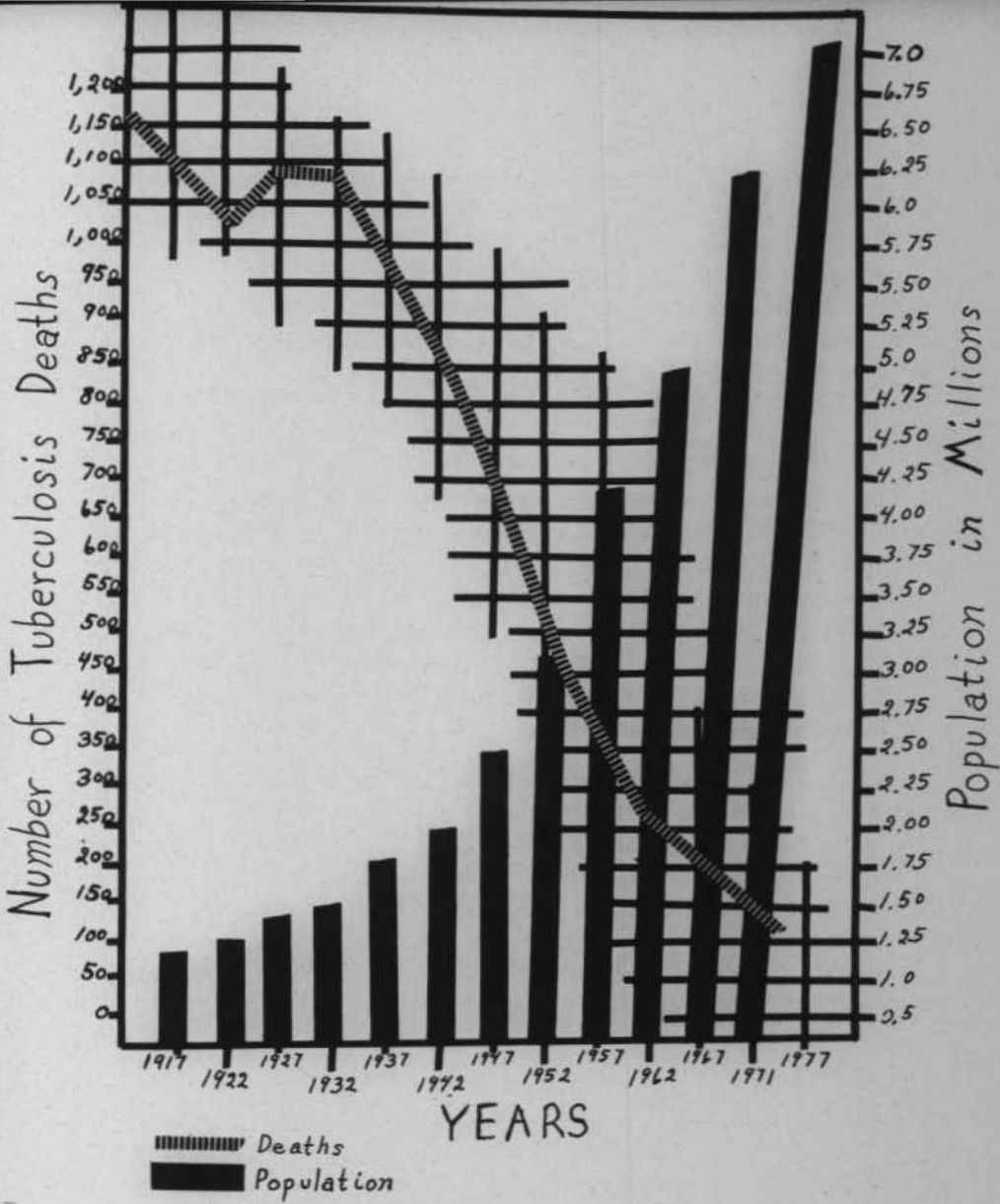
Active steps to organize a concerted effort to control tuberculosis were taken by the State Board of Health in 1930. In 1932, a fulltime clinician and a nurse were employed and four years later a Division of Tuberculosis, the forerunner of the present Bureau of Tuberculosis Control, was formed.

The first X-ray unit was obtained in 1936. It consisted of a unit that could be dismantled and moved from clinic to clinic. Exposures were made on rolls of paper film which had to be sent to New York for processing. The first mobile photofluorographic X-ray unit was a 35mm unit obtained in 1940. It was secured through the cooperation of the Florida Tuberculosis and Health Association, but it was not until after World War II that additional and better mobile units were obtained.

After the war, six modern mobile photofluorographic units were obtained and by 1957, over half a million persons a year were being X-rayed in these units. Later X-ray survey programs were changed from mass screening procedures to programs aimed at areas of high tuberculosis incidence. Today, much of the effort is directed toward preventing infection of the young by detecting persons who are most likely to infect children. Identification of recently infected persons and examination of those who are at high risk are most important; these are given chemotherapy as a prophylactic measure to prevent future disease.

The annual death rate was about 200 per 100,000 persons when the State Board of Health was established. In 1971, the rate was 2.5. Tuberculosis dropped out of the table of "Top 10 Causes of Death" in 1953 and it has remained out of this selected group since that time.

In the past two decades, the decline in tuberculosis deaths has been tremendous. However, the number of cases has remained



A SUCCESS STORY - In the past 55 years, tuberculosis deaths in Florida have dropped from over 1,150 a year to less than 200. The death rate likewise has taken a nose dive. However, during the same period, the population has jumped from 900,000 to over seven million.

high with 1,551 new active cases reported in 1971. This is some 200 more than reported 10 years ago.

In our mobile society, Florida is the target of some 144,000 new residents annually. There is also a floating population of migrant

farm laborers who come from areas with high tuberculosis rates. Refugees and immigrants from other countries contribute to the number of tuberculosis cases. Many elderly persons who have harbored the infection for years migrate to Florida and here their disease becomes active. To illustrate this point, only 14 per cent of the patients in Lantana's A. G. Holly Tuberculosis Hospital last year were born in Florida.

Community Programs

Today's community programs are aimed at keeping the tuberculosis patient at home in his community. Although the compartively short stay in the hospital may provide some hardship to a family - especially when its breadwinner is confined, it is less harsh than when the patient had to spend several years in the hospital. A cooperative patient at home taking his medicine presents no hazard to his community. About 30 per cent of today's tuberculosis patients are treated completely at home.

The patient, after he has been discharged from the hospital, makes routine visits to his private physician - but more likely to the county health department clinic. He has a chest X-ray - which is read by his physician, county health department doctor, or a consultant from the Division of Health. He has a sputum specimen taken for culturing, is given bottles for future specimens, and is supplied with medicine. Florida has approximately 1,800 new patients a year placed on chemotherapy. In any one year, the state has about 4,000 patients under treatment and 9,000 additional persons taking medicine for preventive therapy.

Preventive therapy means the use of isoniazid to prevent the development of active tuberculosis in persons who have been infected with mycobacterum tuberculosis. A person who has been infected has a positive tuberculin skin test.

While all infected persons may benefit from isoniazid prophylaxis, priority is given to household contacts, children and young persons, people with scars on their lungs, and people with certain diseases known to be associated with a high incidence of tuberculosis.

Some of the functions of the Community Programs Section of the Bureau of Tuberculosis Control are:

* supplying technicians, mobile X-ray units, aerosol equipment, films, developing and interpretation services for screening programs, diagnostic clinics, and case follow-up.

* distributing skin testing antigens and supplies for tuberculin testing and providing trained personnel to help in testing;

* providing storage space for X-ray films if the county health department does not have room;

* maintaining a case register of all patients reported to have tuberculosis in Florida. Soon to be computerized, this register will be an invaluable aid in follow-up of patients.

The Division of Health also holds tuberculosis seminars in cooperation with the Florida Tuberculosis and Respiratory Disease Association, its local chapters, and county health departments. These seminars are conducted for health department nurses and health officers, tuberculosis associations' personnel, and students from colleges and universities who are involved in health training. The courses include an over-view of tuberculosis today, types of treatment, nursing approaches, and case-finding techniques.

The Search for Tuberculosis Patients

One of the most accurate ways of discovering individuals who have tuberculosis is by taking an X-ray of the chest. Because not everyone will visit a private physician, the health agency operates several mobile units for the purpose of offering chest X-rays to the public. In 1971, county health departments and cooperating local Tuberculosis and Respiratory Disease Associations made some 711,000 - 70mm X-ray screenings and found 3,717 persons with suspected infections.

Today, 70mm screening efforts are aimed primarily at certain areas known to have a high incidence of tuberculosis. Such areas

---

ILLUSTRATIONS: Page 11, courtesy of Downey, Fairfax, **Portrait of an Era as Drawn by C. D. Gibson,** Scribner's Sons, New York, 1936



COMMUNITY PROGRAM - The search for tuberculosis cases goes on throughout the state. The problem is still with us. A mobile X-ray unit, with local volunteers acting as receptionists, is set up on an empty lot.

include communities where a high tuberculin reactor rate is found, crowded urban areas, and migrant labor camps.

As the number of persons infected with the tubercle bacilli becomes less and less, the tuberculin skin test becomes more and more valuable as a means of spotting the remaining infected individuals in the community.

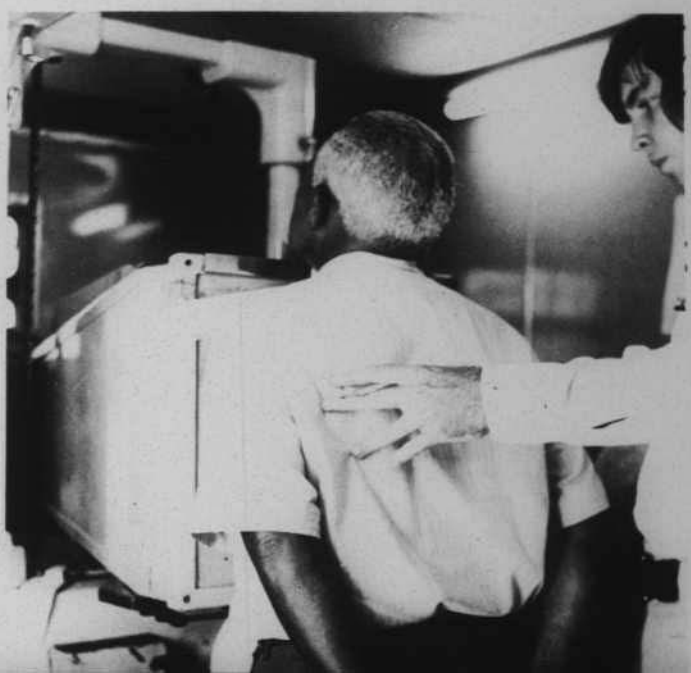
The tuberculin skin test is reliable, simple, and inexpensive. A small amount of a solution called "tuberculin" is injected under the outer layer of skin, usually in the forearm. Two to four days later a nurse or physician examines the site of the injection and if it is red and swollen, the person has tuberculosis germs in his

body. The size of the swollen area is very important in reading the test.

Many county health departments carry out tuberculin skin testing of schoolchildren as a means of finding active cases. When a child has a positive reaction, there is a high degree of probability that there is, or has recently been, an open case of tuberculosis in the child's environment.

In areas where sample screening by X-ray or tuberculin skin testing shows a high incidence of infection, a detailed epidemiological investigation is indicated. Staff members of the county health department interview individuals and secure additional X-rays and tuberculin tests on a household basis. Most of the county health departments in the more populous counties have their own X-ray equipment which aids in these detailed investigations.

Part of the investigation is the collecting and testing of sputum specimens. These are sent to the Division of Health laboratories where stains and cultures are made. When the organisms are found, the laboratories run a differential identification test to determine whether the organism is the human strain or a different variety. During 1971, the public health laboratories performed over 204,000 examinations on tuberculosis sputum and aerosol specimens. Of 59,486 specimens submitted, 4,456 were positive for **M. tuberculosis** or a typical mycobacteria.



INSIDE THE TRAILER - The technician positions a visitor in the mobile X-ray unit. Screenings are carried out in areas known to have a high incidence of tuberculosis.

TEXT MAY BE LOST DUE TO TIGHT BINDING

A Success Story

The tuberculosis picture has changed over the past 54 years. In 1917, the first year that complete records were kept, the death rate in Florida was 118.9 per 100,000 persons. By 1971, it had dropped to 2.5. This change in the death rate is due to

* earlier diagnosis of the disease;
* new treatment through drug therapy;
* improved health education of the public; and
* preventive treatment.

Prior to the diagnostic use of X-rays, when tuberculosis was advanced enough to be diagnosed by symptoms and physical examinations, death was expected in a matter of months - or a few years. Most patients remained invalids until their deaths. The average age at the time of death in 1917 was the late teens or early 20s; 50 years later, the average age is over 60 years.

Today, patients can be diagnosed in early stages and can be treated with little or no restriction of activities. Drug therapy has revolutionized treatment and produced "new life" for those tuberculosis patients who take their medicine as prescribed by their physicians.

But the "White Plague" has not been conquered completely. Public health authorities estimate that there are approximately 30 million Americans infected with tuberculosis; this includes some 500,000 Floridians who may be positive tuberculin reactors. Although the death rates and morbidity rates have dropped, the actual number of persons with active tuberculosis has remained high - due in part to the increase in population.

The Success Story of tuberculosis eradication is almost finished but finding and curing the last few cases is not simple. Like extinguishing the last flames of a forest fire, it is the most difficult part of the job. This is the task before us in the latter half of the 20th Century. This is the goal of the Division of Health.

FLORIDA HEALTH NOTES



Dangerous Drugs and The Laboratory

FLORIDA STATE LIBRARY

DANGEROUS DRUGS — (Cover photo) Popping pills, sniffing solvents, smoking marijuana, shooting "horse" can string you out, turn you off, drive you up a wall. Drugs and narcotics solve no problems. They just create more.

'I NEED HELP' — The Hot Line, part of a community drug program, receives a call from a young woman. The staff of the Hot Line is trained to help her — if she is in trouble - or give correct information on drugs.





Dangerous Drugs and The Laboratory

Scenes from an average Florida community

The Pill-Popping Housewife

Bang! A sugar bowl hit the floor. The children were scrapping. It was that last piece of toast. A door hit the wall. Her husband was leaving for work. Angry! Fight! Scream! Yell! The three children slammed out the door. At last! Mrs. S. was up tight. Head toward the bathroom. In the medicine cabinet. Grab a bottle. Need a pill. (Mrs. S. popped a tranquilizer into her mouth and swallowed some water.)

Soon she felt better and relaxed. Her nerves quieted down. She felt just a little drowsy. But she knew she had to wake up. She must be at the Woman's Club in two hours. It was her turn to serve as hostess. She'd have to take another pill to keep her awake and able to perform her duties.

The Hustling Addict

Joe was floating in a dream world. He was high on a cloud. He had no worries. If anything was bothering him, he didn't care. All that mattered was the pleasure of the moment. He loved every one. But he wasn't worried now that in a few hours he would be looking for his next fix. That last shot of "horse" had him floating. That last deck of heroin was dynamite.

In several hours the kick was over. Joe was bugged by everything around him. He knew his pusher would be waiting at the drive-in with the bag. He would want some bread for the fix. Where was Joe going to get money? He was brought down... scratching for every fix he could get. Without bread he had been sleeping rough. Now he was hung up. Joe knew that he was an addict—a crawling rat. He had started on cigarettes and alcohol, went on to grass, started popping pills, sniffing cocaine, and had made the scene with heroin. He had been busted twice by The Man, served a term in jail, and went cold turkey once when he

couldn't get a fix. Robbed his best friend. Now he knew he should kick the habit. But . . . first he needed that fix.

Grass and a Beginner

Sally slid lower down on the wall next to Anita, her friend. The boy on the other side took a drag on a roach (butt of a marijuana cigarette) and passed it on to her. She took a drag. She was beginning to fly. Time stood still. She felt that all of the kids in the room were her friends and she belonged to them. But she knew she should split. Her mother was expecting her home from school. She was feeling too good to leave. Sally knew that her mother would lose her cool because she was late for dinner.

"Why can't you be like Mary Lou (Sally's sister)? Get home on time! Do your schoolwork! What's the matter with you?" Sally felt her mother did not understand her and because of this she was ready to cop out. Her mother wouldn't have approved of grass.

Sally felt the kids she was with now really understood. Anita had invited her to this house on P———— street where she said that Sally would have a good time. But WOW! This pot was something else. The shared reefer brought them together. Through the haze, she could see a boy preparing his arm for a shot of something called "horse."

She knew that what she was doing was illegal. Another reefer was lit and passed around. Sally took another drag, passed it on to Anita. She slid further down on the wall until she was lying on the floor, completely absorbed in the exaggerated colors and sounds in the room and the activity around her.

The Sniffer

Ralph was a loner. He enjoyed his own company. Seldom spoke. Delighted in surfing. He liked to inhale paint thinner or

---

FLORIDA HEALTH NOTES

Published monthly by the Division of Health (Wilson T. Sowder, M.D., M.P.H., Director) of the Florida Department of Health and Rehabilitative Services. Publication office, Box 210, Jacksonville, Florida 32201. Second Class Postage paid at Jacksonville, Florida. Printed since 1892, this publication is for individuals and institutions with an interest in the state's health program. Permission is given to quote any story providing credit is given to the Division of Health. Editor: Robert A. Schoonover, M.A.

VOLUME 65, NO. 2 **FEBRUARY, 1973**

couldn't get a fix. Robbed his best friend. Now he knew he should kick the habit. But . . . first he needed that fix.

Grass and a Beginner

Sally slid lower down on the wall next to Anita, her friend. The boy on the other side took a drag on a roach (butt of a marijuana cigarette) and passed it on to her. She took a drag. She was beginning to fly. Time stood still. She felt that all of the kids in the room were her friends and she belonged to them. But she knew she should split. Her mother was expecting her home from school. She was feeling too good to leave. Sally knew that her mother would lose her cool because she was late for dinner.

"Why can't you be like Mary Lou (Sally's sister)? Get home on time! Do your schoolwork! What's the matter with you?" Sally felt her mother did not understand her and because of this she was ready to cop out. Her mother wouldn't have approved of grass.

Sally felt the kids she was with now really understood. Anita had invited her to this house on P——— street where she said that Sally would have a good time. But WOW! This pot was something else. The shared reefer brought them together. Through the haze, she could see a boy preparing his arm for a shot of something called "horse."

She knew that what she was doing was illegal. Another reefer was lit and passed around. Sally took another drag, passed it on to Anita. She slid further down on the wall until she was lying on the floor, completely absorbed in the exaggerated colors and sounds in the room and the activity around her.

The Sniffer

Ralph was a loner. He enjoyed his own company. Seldom spoke. Delighted in surfing. He liked to inhale paint thinner or

---

FLORIDA HEALTH NOTES

Published monthly by the Division of Health (Wilson T. Sowder, M.D., M.P.H., Director) of the Florida Department of Health and Rehabilitative Services. Publication office, Box 210, Jacksonville, Florida 32201. Second Class Postage paid at Jacksonville, Florida. Printed since 1892, this publication is for individuals and institutions with an interest in the state's health program. Permission is given to quote any story providing credit is given to the Division of Health. Editor: Robert A. Schoonover, M.A.

VOLUME 65, NO. 2 **FEBRUARY, 1973**



THE DRUG SCENE — The medicine cabinet is where many drug addicts begin their habits - by misusing amphetamines or barbiturates. Possibly 25 per cent of Americans over the age of 18 misuse drugs to some extent.

some other solvent that would give him a high—an intoxication. Day after day, Ralph would hop into his jalopy and head for the beach. As he drove along, he would sniff from a can of paint thinner; by the time he got to the beach he would be feeling no worries or pain. He was an only child. His parents were busy with their own affairs and all through his school days he had been very much on his own. He had begun sniffing glue, gasoline, lighter fluid while in junior high school. Now that he was old enough, he had quit school and spent most of his time at the beach surfing . . . and sniffing.

A friend of his, Bobby, who had introduced him to sniffing, had suffocated to death when he tried to sniff material with a plastic bag over his head. But that did not stop Ralph from finding pleasure from his paint thinner. Whenever he was bored, Ralph would slip out to the garage and sniff a little. But what he did not know was that he was developing a tolerance and was sniffing more and more to achieve his high. The fumes were damaging his brain, heart, kidneys, liver, and respiratory system. He had a feeling that he was drunk; he had difficulty in walking, talking, and thinking straight.

Drugs in Society

Drugs are a way of life in our society. They are prescribed by physicians to kill pain, relax nerves, relieve suffering from chronic conditions, stimulate body functions, prevent disease. All of these are legitimate uses of drugs. But it's not possible to separate society from its drugs. The problem of self-prescribed drug use

permeates all strata of American culture and this leads to an unrecognized misuse of drugs. The use of a pain killer can lead to addiction or dependency. The need for sleep—or to keep awake—can be regulated by drugs. These practices can be abused.

Public health and law enforcement officials estimate that 25 per cent of Americans above 18 years of age misuse drugs to some degree. But what is called drug problems are often symptoms of greater problems called "people problems."

But there is a need for rationality and reality. Parents who smoke a pack or more of cigarettes a day, or down several highballs each evening, cannot without self-deception ask their youngsters "Don't take drugs—they're not good for you." It's time to strip the candy off children's aspirin and the hypocrisy from adult lives and quit the double standards of today. Many people are concerned about the harmfulness of illegal drugs and the problems of a few thousand heroin addicts. But some 10 million of the 80 million persons who use alcohol have a dependency on the beverage.

This issue of **Florida Health Notes** is devoted to a discussion of the various drugs, their legal use, misuse and abuse, those persons who are involved, the substances involved, and what is being done in Florida to cope with the problems of dangerous drugs and narcotics. We will also tell you about the role of the Division of Health's laboratories, the involvement of the Department of Health and Rehabilitative Services and other state agencies and programs, how to detect drug abusers, and of the treatment that is used to help them over their problems.

The 'Devils' Started It

From the very early days when man walked upon the earth, he was plagued by illnesses. He has tried magic, hypnotism, anesthesia, and religion. In prehistoric times, the caveman found through crude research that certain plants would cure headaches, toothaches, or stomach aches. He found that by rubbing plants on wounds, they would heal quicker; by eating others he could drive out the "devils" that made him sick.

This led to medicine men who wore animal skins, gave magical potions and made a business of studying, cultivating, and harvesting herbs that would make people well. As time progressed, surgery began to be practiced by more civilized people without the

benefit of pain killers. Centuries passed before anesthesia was invented that made pulling a tooth or setting a bone less painful to the patient.

All drugs are not bad. Drugs used to prevent and fight disease, help the body work, and relieve pain are useful. But some of these drugs are misused or abused by people who try to solve all their problems with drugs.

The American drug industry legally produces billions of dosage units of barbiturates and amphetamines each year. Much of this production is diverted into illegal markets at some point in the manufacturing and shipping process. Both are legally used when purchased through drug stores by prescription and taken as prescribed by a physician. But they are abused by people taking them by prescription and by people buying them illegally. The number of abusers is unknown, but the abuse of these drugs is increasing. The abuse of amphetamines as weight-reducing pills is also on the rise.

The social costs of the abuse of barbiturates and amphetamines are still largely unknown. Some authorities say that a reduction in the use of tranquilizers may result in a rise of violent crime rates, divorce rates, or in child beating, and would require greater institutionalization of persons with borderline emotional problems.

Abuse of Drugs

It is amazing that drugs which are a blessing to mankind can be used improperly and be a menace to a person's health and happi-



BLAME IT ON THE 'DEVILS' — The early caveman found that he could drive out the "devils" that gave him a headache by eating certain plants.

ness. Some drugs, barbiturates and amphetamines in particular, can be addictive.

There are a number of reasons why people misuse drugs... almost as many reasons as people who use them. There are five categories of drugs that are misused. Later we will go into the forms, effects, and the problems of these drugs and narcotics.

There are

* stimulants, which include caffeine and amphetamines that are used for pep effect; they are called "pep pills," "bennies," or "speed"; cocaine is called "coke" or "snow";

* sedatives, include alcohol, barbiturates, and tranquilizers which calm the mind and body; they have the opposite effect of stimulants;

* marijuana, also known as cannabis, is widely used throughout the country; stronger forms are known as hashish;

* the hallucinogenic drugs include those that affect the mind, including LSD, psilocybin and mescaline;

* narcotics, or hard drugs, which include the opiates (opium, morphine, codeine, and heroin) as well as synthetic narcotics. These lead to the disintegration of the body and mind, and to premature death.

There are many reasons why people misuse drugs.

Youths tend to experiment with drugs, seeking thrills. This appeals to many youngsters. When one has an experience popping pills, sniffing solvents, or smoking marijuana, he wants to share it with his friends. Some people take drugs for kicks (or highs). Pressured by other students or their peers, youngsters join the "group," get with the program, or do the "in" thing. This many times leads to the use of illicit drugs.

Many middle-aged and older persons seek relief by self-medication with alcohol, and over-the-counter drugs, and prescription medicines. Unfortunately, social acceptance of this kind of self-medication is increasing.

People who are nervous, cannot sleep, and over-stressed take sleeping pills or tranquilizers. People who cannot keep up with their work, families, problems take amphetamines—a mental stimulant. With these drugs, people can act cheerful, be able to concen-

trate, and stay awake. Truck drivers, musicians, athletes, middle-aged businessmen, housewives, students—people who are under stress or need an extra "kick"—frequently take amphetamines. People using stimulants often turn to depressants, such as barbiturates, in order to stop the effects of the stimulant. This is a very difficult cycle to break and can lead to death.

Narcotics are taken because of boredom, frustration, problems, or when escape by other drugs is not possible. As the user develops a tolerance for the drug, his body develops a physical and mental need.

Dealers in Death and THE MAN

Opium is one of the most useful substances in medicine. Morphine, a derivative of opium, is the marvelous drug which relieves pain and induces sleep. A derivative of morphine, heroin, is one of the dangerously abused substances in America.

For centuries the growing of the poppy plant that produces opium has been a legal occupation in many Near and Far Eastern countries. It grows in a band reaching from Turkey across Southern Asia. It is also grown in Africa and South America. The opium poppy blooms in June and July and a few weeks later the opium resin is extracted from the pods. The governments of opium-producing countries try to control the amount of acreage devoted to poppy growing and the markets, but of the thousands of tons of opium produced each year, over half goes into illegal channels. A small portion finds its way into the United States. For this portion American addicts spend unknown millions of dollars.

In the case of Turkish opium, which is considered the best, growers either plant illegal acreage or withhold from the government part of the opium produced. This illegal opium is sold to syndicates in Lebanon or Syria where it is transformed into morphine. This is smuggled into Southern France where undercover laboratories refine the morphine into heroin. These laboratories are constantly moved to keep them from falling into the hands of the police. One theory is that some of the heroin laboratories are located in trucks and thus mobile and difficult to find. Once the heroin is made it is smuggled into the United States through various ports.

In the United States the heroin is passed through several levels of distribution before it reaches the addict on the street. At all

levels the heroin is diluted with quinine, milk, sugar, arsenic, or some other adulterant which makes it possible for two units, instead of one, to be sold at the next lower level. A kilo of heroin (2.2046 pounds) sells for $30,000 or more on the East Coast. It may bring over a million dollars on Florida streets.

There are approximately 100 wholesale operators in the United States that monopolize the illicit drug business. These are tied in varying degrees to organized crime. Violence is a method of control. Monopolies that are established usually have large organizations and sophisticated information systems that alert them to dangers from a rival organization or the police.

Arrests at the lower levels, where supplies and pushers operate, do not deter drug operations. Police try to apprehend and successfully prosecute higher level members of the narcotics traffic business—the importers and distributers—who may work behind a "front" or legitimate business. This requires more sophisticated training of police, higher salaries to lessen temptations of bribes, and higher budgets for the purchasing of information.

Control of the drug traffic is most difficult. Approximately 250 million persons enter the country each year. Over 65 million cars and trucks cross the borders, 306,000 airplanes land at airports, and 157,000 ships enter ports. Customs officials say that there are about 30,000 places where heroin can be hidden on an average ship.

The consumption of heroin puts a tremendous cost on the rest of society. Most purchases are financed through criminal acts, such as thefts and prostitution. Because of the involuntary redistribution of the existing wealth, society spends its resources to prevent crime, apprehend, try, punish and rehabilitate criminals. The actual cost includes money spent on locks, alarms, lights, security guards. The social costs include medical expenses, lost productivity of individuals injured in crimes, medical expenses and premature deaths of addicts and victims of criminal activity.

A 'Monkey' on Your Back

Heroin, the most frequently abused narcotic, is an opiate. The drug may be

* eaten;
* sniffed or snorted—breathed into the nostrils;
* injected under the skin—called skin popping; or

* mainlined—injected directly into the bloodstream through a blood vessel.

The injection of the heroin directly into the bloodstream can lead to infection. Abscesses may develop by the use of unsterile instruments. A form of hepatitis may be transmitted from one person to another by the use of a common hypodermic needle.

Heroin slows body functions, diminishes the desire for food and other needs. It impairs mental and physical performances and lessens physical activities. The price of abuse is high. Chronic users develop both physical and psychological dependency. A heroin user first feels a "rush" or pleasurable sensation. He is freed from all anxieties and tensions. This is followed by almost complete stupor—sometimes called "nodding out." During withdrawal, an addict sweats, shakes, has a runny nose, tearing eyes, chills, diarrhea, nausea, and abdominal and leg cramps.

Other narcotics found in the drug traffic to a certain extent are paregoric and codeine, which are common ingredients in cough syrup and pain medications. When taken as prescribed by a physician, they usually do not present problems.

'Jolly Beans' and the Crash

When most people think of drug abuse, they think of narcotics, particularly, heroin. Mrs. S., at the beginning of our story, would not consider herself an abuser of drugs. Yet she takes amphetamines to pick her up for her club meeting and barbiturates to help calm down her nerves. She may be doing this with prescribed medicines. Her body can develop a tolerance for the drugs and she may take more and more pills to obtain the effects she desires.

In small amounts "pep pills" provide a sense of alertness and well-being. Hunger is diminished and short term performances may be enhanced in the fatigued person. When taken in large doses, an ecstatic high occurs. This decreases in a few hours. More doses are necessary to keep up the stimulation. This cycle can go on until the individual is physically exhausted. While under the influence of large amounts, the person may become overactive, irritable, talkative, suspicious, and sometimes violent.

Excessive amounts of amphetamines can cause liver and brain damage, abnormal rhythms of the heart, and increased blood pres-

sure. With abuse, the individual can develop the shakes, itching, muscle pains, and tension. Collapse and death have occurred.

Amphetamines are usually taken in the form of capsules or tablets. In the form of crystals, they are dissolved and injected into the veins—the effects are immediate and more intense. This crystalline form is called "speed." Unlike the heroin addict, who is passive, the "speed freak" can be suspicious and violent. Although he may want to stop using the drug, he is so confused and paranoid that he takes more to relieve his anxiety. He rejects treatment and rehabilitation. People who have broken the habit often return to the life of a "speed freak."

The 'Downers' Can Lead to Death

Many people take a depressant to induce sleep. When taken in small doses they reduce daytime tension and anxiety. When used without close supervision and taken in large amounts, the sedatives, depressants, barbiturates become increasingly habit forming. In the drug subculture, they are called "goof balls," "sleepers," and "downers."

The most common method of suicide with drugs is the taking of sleeping pills. In addition, accidental deaths may occur when a person takes one or two pills at bedtime, falls asleep, and then awakes. Not remembering that he has taken his sleeping medication, he takes more. If this is repeated several times during the night, a poisonous overdose may be consumed.

If the barbiturate dependency is severe, sudden discontinuance of the drug can be dangerous. A severe withdrawal state resembles the alcoholic's delirium tremens. The patient is sweaty, fearful, sleepless, and tremulous. He is restless, agitated, and may suffer convulsions. He may have delusions, confused thoughts, and see things that are not present. Barbiturates must be withdrawn slowly; the patient requires medical and nursing care. Sudden withdrawal is an acute medical emergency requiring hospitalization and intensive care.

When taken with alcohol, the barbiturates may be fatal. A person who has consumed some alcohol and then taken just a few capsules may not survive. Barbiturates, like alcohol, cause damage to the brain and liver.

Acid - Basis for a 'Trip'

The hallucinogenic drugs are mind-affecters capable of causing changes of sensation, thinking, self-awareness, and emotions. Time and space are altered; there are illusions, hallucinations, and delusions—either minimal or overwhelming—depending on the dose. The results are variable. A "high" or "good trip" consists of a pleasant imagery and emotional feeling. A "bad trip" or "bummer" may be terrifying with emotional states of dread and horror.

LSD (lysergic acid diethylamide) is the most potent and best-studied hallucinogen. There are also a large number of lesser known synthetic and natural drugs. They include mescaline (from the peyote cactus), psilocybin (from the Mexican mushroom), morning glory seeds, and dozens of others.

Heavy users of LSD sometimes develop impaired memories and attention spans, mental confusion, and difficulty with abstract thinking. Research is continuing on the effects of the drug and its possible induced congenital abnormalities.

Use of LSD may produce "flashbacks," a recurrence of a trip days or months after the last dose was taken. Such a flashback, occurring without apparent cause, can induce anxiety and concern that one is going mad. Constant fear that one may have such a flashback may lead to depression or suicide.

The Illegal Weed

Marijuana is probably one of the most widely used illegal drugs in Florida. As of November 1971, the best estimates are that 15 million Americans in the United States have experimented with marijuana. For this they could have been imprisoned by the federal government for up to 10 years. Possibly 30 per cent of this number became occasional users, five per cent were frequent users, and a minority went on to hard drugs—narcotics.

Marijuana comes from the flowering tops and leaves of the Indian hemp plant called **cannabis sativa**. Hashish is a more potent form which is made from the resin of the plant. The weed has been used in various countries from ancient times. It was described in Chinese literature as early as 2737 B.C., and introduced into India in 800, B.C. It was sanctioned by the Hindu and Islamic religions which forbade the use of alcohol.



ILLEGAL GRASS — The Indian hemp plant grows in many parts of the world and is used for the manufacturing of a tough fiber for rope and other products. But it is also the source of marijuana, one of the most widely used, illegal drugs in Florida.

Usually smoked in self-rolled cigarettes (called joints or reefers), marijuana distorts the vision, hearing, and sense of time. Thoughts become dream-like. One believes that he is thinking better. Illusions are experienced. Hallucinations and delusions are rare. More often the feeling is one of a passive euphoria or high. The individual usually withdraws into himself with occasional outbursts of laughter or crying.

Physically it reddens the whites of the eyes, increases the heart rate. In extremely heavy users, a cough may develop due to the irritating effects of the smoke. Some people become hungry or sleepy while smoking marijuana.

Marijuana has no currently known medical properties ... nor medical use. Yet "grass" is the "in" thing and more youngsters are turned on by their "friends" than by pushers. Frequently a pusher will suggest to his customers that they try a more dangerous drug. Marijuana is not addictive—physically; but the consistent "pot-head" is likely to be emotionally disturbed and he may treat his personality problems with marijuana. The effects of the drug are not scientifically known. Research is continuing on the effects of the drug on the human body. In those countries where *cannabis* use has been traditional, excessive amounts are claimed to induce loss of motivation, apathy, memory difficulty, and loss of mental acuity. Reports of psychotic breakdowns from the extended use of marijuana are frequently found in medical literature of the Near and Middle East.

The Volatile Substances

Some substances were never intended to be taken by man—either swallowed or inhaled. How often have you opened a can of solvent and discovered that you could not use it in an enclosed room. Most of these chemicals are quite dangerous.

Model airplane glue, gasoline, cleaning fluids, paint thinners, and other solvents are the materials that youngsters sniff. Like Ralph, who appeared earlier in our story, they can experience a clouded mental state which can develop into a coma. Temporary blindness has been reported. Death is known to occur when the solvent is inhaled without sufficient oxygen, as for example, when an individual loses consciousness and his mouth and nose are covered by the plastic containing this solvent. The fumes have a poisonous effect on the brain, kidneys, liver, and bone marrow.

Kicking the Habit

The narcotics problems in the United States go back well over a century. This country had a large number of narcotics addicts in the period between the Civil War and the enactment of the Harrison Act of 1914 which limited the availability of drugs. Prior to 1914, the addict was largely white, female, middle-aged. She lived in lower socioeconomic, rural areas. The drug was morphine or some other opiate taken in patent medicine. These were freely available at local pharmacies. People of the time thought addiction

Marijuana has no currently known medical properties ... nor medical use. Yet "grass" is the "in" thing and more youngsters are turned on by their "friends" than by pushers. Frequently a pusher will suggest to his customers that they try a more dangerous drug. Marijuana is not addictive—physically; but the consistent "pot-head" is likely to be emotionally disturbed and he may treat his personality problems with marijuana. The effects of the drug are not scientifically known. Research is continuing on the effects of the drug on the human body. In those countries where *cannabis* use has been traditional, excessive amounts are claimed to induce loss of motivation, apathy, memory difficulty, and loss of mental acuity. Reports of psychotic breakdowns from the extended use of marijuana are frequently found in medical literature of the Near and Middle East.

The Volatile Substances

Some substances were never intended to be taken by man—either swallowed or inhaled. How often have you opened a can of solvent and discovered that you could not use it in an enclosed room. Most of these chemicals are quite dangerous.

Model airplane glue, gasoline, cleaning fluids, paint thinners, and other solvents are the materials that youngsters sniff. Like Ralph, who appeared earlier in our story, they can experience a clouded mental state which can develop into a coma. Temporary blindness has been reported. Death is known to occur when the solvent is inhaled without sufficient oxygen, as for example, when an individual loses consciousness and his mouth and nose are covered by the plastic containing this solvent. The fumes have a poisonous effect on the brain, kidneys, liver, and bone marrow.

Kicking the Habit

The narcotics problems in the United States go back well over a century. This country had a large number of narcotics addicts in the period between the Civil War and the enactment of the Harrison Act of 1914 which limited the availability of drugs. Prior to 1914, the addict was largely white, female, middle-aged. She lived in lower socioeconomic, rural areas. The drug was morphine or some other opiate taken in patent medicine. These were freely available at local pharmacies. People of the time thought addiction

was a vice, a physical disease, a moral perversion, a product of neurotic inheritance, or the result of morphine poisoning. Treatment consisted mostly of separating the addict from his drugs.

At the time of the Harrison Act, there were probably 200,000 to 300,000 opiate addicts who were cut off from their supply and unable to receive drugs except by prescription. For the first time, habit-forming opiates were controlled.

The alternative of going "cold turkey" (complete withdrawal of the drugs) was maintaining the individual on his opiate. To help their patients, many physicians continued to prescribe the drugs. Because the use of narcotics was a criminal act, a number of physicians were arrested and some went to prison.

A number of maintenance clinics were opened following World War I. When these were closed a large number of addicts remained. The U.S. Public Health Service opened two clinics between 1938 and 1955 for the treatment of addicts. The basic treatment had not changed—a separation of the addict from his drug. Public health authorities were of the opinion that once the addict could be cured, they would not go back on drugs. However, the rate of success was low.

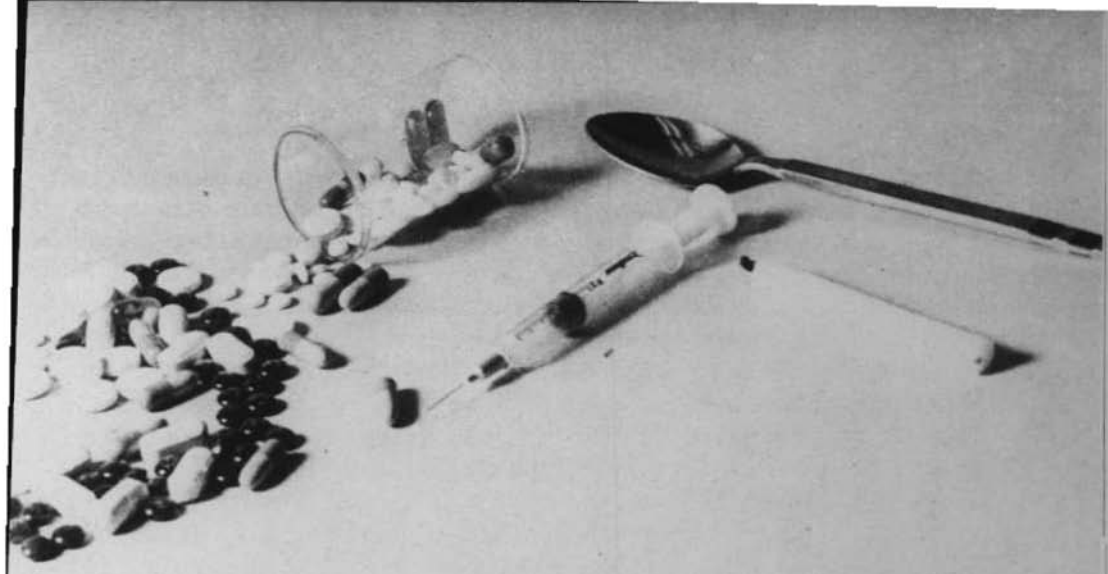
A synthetic narcotic substance, Methadone, became a substitute for heroin in the 1960's. This substance, which cost less but is still an addictive drug, is being used in clinics to wean addicts from heroin. Researchers also are working with chemicals that block the effects of opiates and that are not addictive in themselves.

Law Enforcement in Florida

Society has a big stake in the control of dangerous drugs and narcotics. Florida laws make it unlawful to possess, sell, use, grow, manufacture or make narcotic drugs.

According to the Florida Department of Law Enforcement, narcotics agents, vice squads, police and sheriff's departments made over 8,800 arrests during the first six months of 1972 for the possession of drugs; over 2,000 persons were arrested for the sale of narcotics. Over 64 per cent of those arrested for narcotic drug law violations were under 21 years of age.

To support their habits, addicts and drug abusers steal, rob, break in, prostitute themselves, and sell drugs. Over 28,300 arrests were made in Florida during the first six months of 1972 for larceny



PARAPHERNALIA OF THE DRUG TRAFFIC — Pills, hypodermic needle, candle and spoon are symbols of a drug subculture that is growing in Florida. Over 8,000 arrests for the possession of drugs were made in the Sunshine State during the first six months of 1972.

---

and breaking and entering. Many of these crimes were committed by addicts who were trying to support a drug habit.

According to police, the average addict will spend between $40 and $50 a day for drugs. When he builds up his immunity, he wants more and more—as long as he can pay. To support his habit, he frequently turns to pushing drugs. The average addict, according to police, brings three additional persons each year into the drug subculture—by accident—through friends, peer pressure, and social activities.

An addict can buy a "dime bag" or "deck" of heroin for $10. Or if he is lucky, he can buy three decks for a quarter ($25). The heroin dealer may sell the street peddler a half load (15 decks) for which he is paid $90. The street peddler then sells them for $150, netting $60. Peddlers in some Florida cities, such as Jacksonville, may sell as many as six half-loads in a day.

Police officials say that prior to the 1960's there was little heroin in Jacksonville. There were so few addicts that they could

have been loaded onto a bus. Today, the use of heroin is growing fast. In the last four years, the habit has spread from the ghetto areas into the middle-class white communities. Drive-ins, pool rooms, and school grounds—anywhere youth gather—are spots familiar to narcotics pushers. There is no way of knowing the amount of narcotics and dangerous drugs finding its way into Florida. Heroin is the most serious and receives the most attention, but because of its widespread use, marijuana accounts for 62.6 per cent of the arrests, and 43.4 per cent of persons involved in sales.

Florida, with its long coastline, has been the objective of many people bringing in marijuana. Small planes fly to Jamaica and other Caribbean islands and return with loads of grass. They land at the abandoned airfields left over from World War II. The police are ever on the alert for such landings. In early December, 1972, a shipment of marijuana valued at $725,000 was intercepted by police and narcotics agents in the Florida Keys.

Dangerous Drugs and the Laboratory

In years past, the old State Board of Health (now Division of Health) was involved in the enforcement of the drug laws. Reorganization of the state government in 1969 moved the drug program to the Florida Department of Law Enforcement.

Although the identification of narcotics specimens for court cases is the responsibility of the Department of Law Enforcement, the Tampa Regional Laboratory, operated by the Division of Health, examines specimens collected by police officers as the result of a grant from the Governor's Commission on Criminal Justice. The Central Laboratory in Jacksonville provides space and equipment for a chemist hired by the Fourth Judicial District; the Brevard County Health Department laboratory identifies specimens for a fee; and the Dade County metropolitan government operates a crime laboratory in Miami.

The Division of Health laboratory also participates in the rehabilitation of drug abusers by testing urine specimens of addicts who are arrested on narcotic and dangerous drug charges, and those undergoing treatment in Methadone clinics. The laboratory in Jacksonville tests some 150 to 160 specimens a week from the

Methadone Clinic at University Hospital and a residential treatment center. These tests are not for law enforcement but for health maintenance.

The Division of Health is asking the legislature for funds to expand this service to other areas of the state to fulfill new federal requirements for Methadone treatment, meet the needs of licensed Methadone clinics, and assist residents of treatment and rehabilitation centers who are not using Methadone. There is a need to extend this service to other state agencies involved in law enforcement and the parolee system.

The public health laboratories in Jacksonville and Tampa also perform toxicology examinations on persons who are admitted to hospitals and suspected of being under the influence of drugs or

---

LABORATORY TESTING — A Division of Health chemist runs urine specimens from clients of a Methadone clinic for possible traces of morphine. These tests are made for health maintenance, not for law enforcement.



other poisons. This is a limited service to physicians to assist them in proper diagnosis and treatment of their patients. Hospitals do not usually have the equipment or the trained personnel to perform these analyses.

The Division of Health also plays a major role in the implied consent law which involves the misuse of alcohol by automobile drivers. The health agency examines and issues permits to police personnel who perform the breath analysis test, and certifies the equipment used in the test. The Division of Health is also asking for state funds to supplement federal monies received from the Governor's Commission on Highway Safety which are of a limited duration. The Department of Highway Safety enforces the implied consent law, and the Department of Education cooperates in the training program.

The Florida Drug Abuse Program

The Florida Drug Abuse Program, located in the Department of Health and Rehabilitative Services, is the state agency responsible for developing a comprehensive plan for prevention, rehabilitation, education, research in drug abuse and dependence, implementing the drug abuse program in Florida, and for the licensing and coordinating of the many federal, state, local, and private drug programs in the state. It works with all community drug programs through 11 regional offices.

In addition, the Drug Abuse program has counselors on staffs of the eight Florida Correctional Institutions who serve as links between the inmates and their communities. Out of some 2,500 men and women in these institutions, the counselors work with approximately 800 who have drug abuse problems. In addition, Florida judges can place someone charged with a drug-related crime directly into a community program instead of in prison.

The Florida licensed community programs are sponsored by various organizations, including churches, non-profit agencies assisted by United Funds or Community Chests, and individuals who want to do something about the drug problem and have the ability to work with people. The community programs include residences for ex-addicts, Methadone maintenance programs, counseling centers, medical out-patient and in-patient clinics, rap

houses, hot lines (where reliable drug information is given out), half-way houses, detoxification centers, and educational programs. Each program offers every client complete confidentiality and may treat all groups regardless of age.

A Media Center of the Drug Abuse Program serves as a clearing house and reference center for drug information. It has a library of some 300 titles, has placed over 200 books in the State Library, sent out 54,000 pamphlets and other pieces of literature on drugs, circulates films through the Florida State University Film Library, and distributed material to the mass communication media. In addition, it collects current material from magazines and newsletters, and drug-related reports published by many agencies.

Located in the 11 regional offices are: regional advisory councils (comprised of local people), regional coordinators, and youth coordinators. The councils determine the needs of the communities, evaluate all project proposals, and recommend priorities for funding. The regional coordinators assist the council, work with local groups to help them secure financing, and are responsible for the quality of drug abuse treatment and education in the regions. The youth coordinators work directly with the youth in the communities to improve youth involvement, and open channels of communications that do not exist.

The Florida Drug Abuse Program cooperates with all of the federal and state agencies, particularly the Department of Education, Department of Law Enforcement, and such professional groups as the Florida Medical Association's Ad Hoc Committee on Drugs.

Drug Education in the Schools

Because young people are the ones frequently involved in drug abuse and experimentation, the State Legislature passed the Drug Abuse Education Act in 1970, to provide children and youth with knowledge of the adverse and dangerous effects of drugs on the human mind and body. Included in the law are intoxicating liquors and beverages, and tobacco.

To carry out the new program the Department of Education used the "Triple T" concept whereby Trainers Teach Teachers.

Through the state university and community college systems, a series of workshops were held to instruct county drug education coordinators. These coordinators went back to their counties and instructed local teachers.

During the first year of the drug education program, information was given to Florida's teachers,. During the second year, the "humanistic" approach was used with such questions: "Why drugs at all?" "Why do athletes and honor students go on drugs?" Teachers were urged to establish rapport with their students and develop the ability to listen.

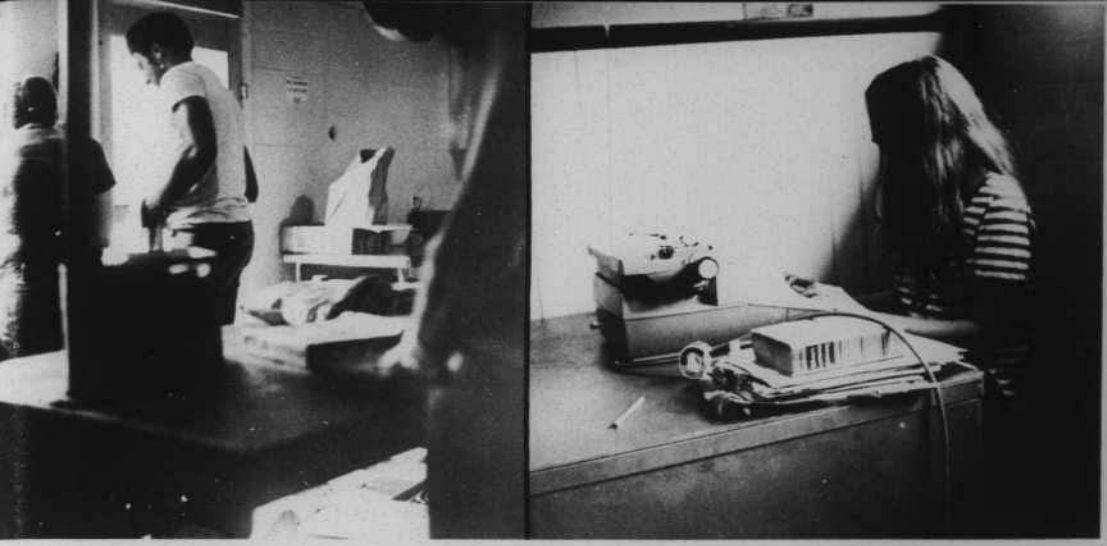
Schools established rap rooms where students and teachers could talk; teachers were asked to look at their attitudes toward long hair; students were encouraged to communicate with counselors on social and economical issues, thus strengthening the"family unity" of the school.

Each school in the state was asked to formulate a plan to implement the state law which required that a unit on drugs, alcohol, and tobacco be given each year. Programs in the state varied. Some school districts provided a comprehensive program involving community leaders and resources. Some districts integrated the drug information into already existing curricula; others distributed the drug education materials to the teachers; a few held only one class to fulfill their commitment. Some school districts used specially-trained instructors; others distribute drug information through regular classroom teachers.

A Helping Hand

All of the state drug abuse programs and the educational programs would come to nought if there were not community projects to work with the drug abusers on the streets. These projects are aimed at preventing people—who may be fooling around with drugs—from becoming hooked, helping those who have problems, assisting those on drugs to kick the habit, and giving them an alternative to drug use and a purpose in life.

Drug addicts reach rehabilitation centers through the courts, their friends and parents, lawyers, probation officers, and other state and local agencies, or by the police, school groups, or out-



REHABILITATION — Ex-drug addicts find shelter in residences where they are able to find alternatives to drug use and a meaning to life. The ex-addicts do all the work of the residences themselves. They serve in the kitchen, in the office... (continued on page 53)

---

reach workers who are assigned to community areas where drug traffic flourishes. These outreach workers are usually ex-drug addicts who know the language, names, and habits of the drug abusers. Sometimes they may have had a close relationship with them in the past.

Not all of the drug addicts are helped the first time. Joe, the heroin addict, passed through the rehabilitation center several times before he would accept help. The first time a friend brought him in. The second time he was found by an outreach worker. Then he came in by himself but walked out because he became irritated; the fourth time he was brought in by his lawyer after he had been "busted" (arrested) for being under the influence of drugs. When faced by prison or rehabilitation, Joe chose the latter.

Many addicts, when they enter a rehabilitation center, are interviewed by a social worker who determines whether they need a day clinic, a 24-hour residence, or merely psychiatric treatment. Addicts must be detoxified, ambulatory, drug free before they are admitted to rehabilitation centers and residences.

The residences may be staffed by employees of the sponsoring organization, but operated by ex-addicts who do all the work,

counsel those with problems, watch out for friends who may be going back on narcotics, and protect each other from drugs. Some ex-addicts attach themselves to centers after they have been cured. These are the nuclei of their lives and they would rather associate with cured people than go back to their old environment.

Rehabilitation centers have individual and group counseling and a wide variety of constructive activities—including music, art and crafts, drama, and recreational activities. Centers involve the clients, their families and friends, and the community at large in an awareness of the drug abuser and the potential drug abuser. Physicians and nurses provide medical services in out-patient clinics and hospitals; Methadone treatment is available to opiate addicts in a few Florida cities. Treatment is combined with intensive counseling, social follow-up, and vocational rehabilitation. Prevention services provide speakers and workshops on drug abuse to schools, clubs service organizations, and churches.

Identifying the Drug Abuser

Everyone is his brother's keeper. Whenever an individual appears to be unwell or disturbed, his parents, friends, and teachers should be concerned. Some drug use is legitimate. Disorders, such as epilepsy, diabetes, or asthma, may require drug therapy that will produce low-level side effects. A child or adult may be drowsy from taking a non-prescription product, such as antihistamine.

Drug abuse is spreading throughout the United States. It's a major problem in Florida. Many parents do not know what evidence to look for if their child is abusing drugs. How good is your arithmetic? Can you add a cloying, sweet, burnt-rope smell to blood-shot eyes and a drowsy attitude and come up with marijuana smoking?

Drug use has definite clues:

* arm puncture, constant wearing of long-sleeved shirts, spots of blood on the sleeves, bent spoons, hypodermic needles, and eyedroppers.
* glazed eyes, enlarged pupils, sunglasses worn constantly, drowsy behavior, and slurred speech.
* prescription drugs disappearing from the medicine chest, unexplained pills of all kinds, cough medicine bottles around.

* constant borrowing or money manipulation with family or friends, a rash of robberies or radio and television sets suddenly disappearing.

* staying out long hours and coming home with strange odors, furtive behavior regarding drugs and possession, poor physical appearance, unusual flare-up outbreaks of temper.

While much of the work of community projects is aimed at young people, there is little done for the housewife who is popping pills or the business man who takes amphetamines to do that extra work. The only thing they can do is to see their physician with their drug problems.

The Decision is Yours

Now is the time to put it all together. We have presented a few facts on drug abuse. If you want an environment free of substance abuse, you will have to work for it. Know about legislative needs and work toward effective laws and law enforcement.

Do away with some of the stereotypes concerning drug abuse. For instance, adults misuse drugs as much as the youth. Alcohol and tobacco are misused more than heroin and marijuana. Dope pushers are not evil old men, but your children's friends who want to share their fantasies for free, or to sell drugs to support their own habits. Drugs are not something just being sold in other parts of

---

...clean the floors and find time for recreational activities. They counsel others who have similar problems and try to prevent their friends from going back on drugs.



TEXT MAY BE LOST DUE TO TIGHT BINDING

your city; they are probably being peddled in your neighborhood and in your schools, and down at the corner. They are in your medicine cabinet, and you must be the one to teach your children to use them carefully.

Here are the facts: Drugs are necessary in our society—specifically in the practice of medicine. The trick is to use them properly and not be afraid of them.

Very few drug-dependent people planned to get hooked. They thought they could use drugs, or play with them, and walk away. But the drugs turned on them and wouldn't let go. The apparent solutions of life that drugs offer are short-lived, false hopes. Drugs do not solve anything. They create more problems than they help. Whatever you decide, you'll have to live with your decision.

For Information

If you have a problem with drugs or desire information, write the Florida Drug Abuse Program, 320 Blount Street, Tallahassee, Florida 32301, or call the Florida Drug Abuse Program's regional coordinator in your area:

Region I
Pensacola (904) 438-2105

Region II
Tallahassee (904) 222-7452

Region III
Gainesville (904) 373-6773

Region IV
Jacksonville (904) 356-9731

Region V
Orlando (305) 422-8111

Region VI
Pasadena (813) 342-8921

Region VII
Tampa (813) 251-0541

Region VIII
Lantana (305) 582-1454

Region IX
Punta Gorda (813) 629-7591

Region X
Ft. Lauderdale (305) 524-2551

Region XI
Miami (305) 573-8400

FLORIDA HEALTH NOTES



VOLUME 65 — NO. 3
MARCH 1973

EPILEPSY and Related Diseases

FLORIDA STATE LIBRARY

TEXT MAY BE LOST DUE TO TIGHT BINDING



RECORDING BRAIN WAVES—(Cover photo) The electroencephalograph is an important instrument in the diagnosing of epilepsy. The electrical impulses of the brain are recorded on the moving strip of paper. The results of brain scans are shown on pages 74 and 75.

LABORATORY TEST—A chemist injects a specimen of blood serum into a gas chromatograph. The machine measures the amount of dilantin in the blood. This indicates whether the patient is receiving the right dosage of medicine. Research continues in the diagnosing and treatment of epileptic seizures

EPILEPSY and Related Diseases

Roger was 10 years old when he began having what his parents called "attacks." He would rub his eyes, tremble violently, fling his arms around, and sometimes fall. The attacks would last two or three minutes. Afterwards he would sleep for several hours and then awaken not remembering anything that had happened.

His parents took him to the family doctor and then to several specialists. About a year after the attacks started, a physician, following careful study, told Roger's parents that the trouble was EPILEPSY.

The parents protested that the physician could not be right. Nobody in their families had ever had that shameful disease, and nobody had been insane. Roger had always been bright, healthy, and active.

The physician told them that

* epilepsy was **not** a shameful disease - even though some people seemed to think so;
* the seizures usually were **not** inherited; and
* the condition had nothing to do with insanity or retardation.

The physician prescribed some medicine and explained that it controlled most cases similar to Roger's. He had to adjust the medicine from time to time until the boy's attacks were less severe and less frequent. Roger kept on with his school work and activities - such as supervised swimming, fishing, and baseball. He came to realize that he was not different from his friends - except he had seizures and the medicine he took was to control them.

During the 20 centuries in which convulsive seizures have been written about in literature, many superstitions, half-truths and prejudices have accumulated about them. Many still remain. Many opinions developed in the Dark Ages are still believed.

Epilepsy, with its associated disorders, is the hearth-side Cinderella of Medicine - kept hidden, ignored, vilified.

This issue of **Florida Health Notes** will tell you what epilepsy is and what it is not. We will discuss the various forms of seizures, how epilepsy is diagnosed, how the symptoms are treated, and what steps an epileptic can take toward a happy and normal life.

Epilepsy — The Need for Enlightenment

Fifty years ago cancer was a family disgrace. Tuberculosis, forty years ago, was a disease hidden in the corner. Thirty years ago, public discussion of syphilis was forbidden. On these and other diseases the light of public knowledge has shone; intelligent methods of diagnosis and control have been instituted. Epilepsy still remains in the dark closets of public prejudice and ignorance, long ignored by public and private medicine. Despite advances in the study of epilepsy, much uncertainity and misunderstanding still remain.

The knowledge that seizures set some people apart goes back to the beginning of time. One of the early Egyptian Pharaohs was an epileptic and he was declared a "god." The seizures of Julius Caesar were vividly described by Plutarch, the Greek historian.

St. Mark, in his Gospel (9:14-29) described the epileptic boy who was brought to Jesus, as follows: "The spirit attacks him, it throws him to the ground, and he foams at the mouth, grits his teeth, and becomes stiff all over." (**Good News for Modern Man** translation).

Some of the historical figures known to have suffered seizures included: Alfred the Great, Lord Byron, Algernon Charles Swinburne, the poet; Guy de Maupassant, the author; Paganini,

FLORIDA HEALTH NOTES

Published monthly by the Division of Health (Wilson T. Sowder, M.D., M.P.H., Director) of the Florida Department of Health and Rehabilitative Services. Publication office, Box 210, Jacksonville, Florida 32201. Second Class Postage paid at Jacksonville, Florida. Printed since 1892, this publication is for individuals and institutions with an interest in the state's health program. Permission is given to quote any story providing credit is given to the Division of Health. Editor: Robert A. Schoonover, M.A.
Post Office Form 3579 should be mailed to Box 210, Jacksonville, Fla. 32201

the violinist; and Van Gogh, the painter. Epilepsy has been called the "sacred disease," (because of a belief that a god was responsible for the seizures); the "falling disease," "the royal disease," and "the fits." The Greeks called it "epilepsy" which means "to seize" or "to be seized."

Within the last few decades, medical investigators have discovered much about seizures and laid the groundwork for further advances. They have discovered that epilepsy is not a disease in itself. Usually, seizures are signs that there is something physically wrong.

The brain has millions of nerve cells called "neurons" which work together to control or guide us in whatever we do. The cells build up a supply of electricity through the action of chemicals they contain. Each cell has its own storage battery which is discharged at the proper time and then recharged instantly.

When the cells become overactive and fire off irregularly seizures may occur. This disturbance may spread to neighboring areas of the brain, jump to distant ones, or overwhelm the brain. When these irregular impulses occur, the body responds and a seizure results. Many things can trigger the discharge of the electricity that causes a seizure. Medical research has found that attacks may occur in some people on the slightest provocation: such as tickling, any kind of fear, anger, or mental stress. Seizures have been known to occur when the sensory organs (touch, smell, taste, hearing, or sight) are stimulated. A touch on the face, the blowing of a whistle, flashing of lights, or the sounds of music have been known to cause seizures. When the majority of neurons begin working in harmony again, the seizure is over.

The number of epileptics is not easily determined. Many families keep their epileptic children sheltered within their homes, though fortunately this is becoming less common. Some public health authorities believe that as high as one out of 50 persons may have repeated seizures. This could mean that Florida has approximately 144,000 persons with epilepsy. However, just because a person has a seizure or two does not mean that he is an epileptic. A young child with a high fever who has a convulsion may never have another.

What Are the Causes of Seizures?

Seizures are caused by a disturbance of brain function - an "irritation" of the brain - a sudden, violent, disorderly discharge of electrical impulses from the brain cells. Sometimes an injury to the brain will set up the disorder.

There are a number of factors that occur during a person's birth or lifetime that could cause damage to the brain and result in seizures.

The following conditions or situations during pregnancy or birth may cause brain damage: German measles in the mother and occasionally other infections, sometimes unrecognized; Rh incompatibility; toxemia of pregnancy; abdominal injury; premature labor; difficult, prolonged, or complicated birth.

A birth injury may show up as the cause of seizures late in life. Other factors causing actual brain damage include: high fever, head injury, viral encephalitis, congenital brain defects, various metabolic errors, vascular sclerosis, or vascular insufficiency.

The occurrence of seizures does not mean that a person necessarily has epilepsy. Seizures may occur with any of the following diseases or conditions:

* acute infection of the brain or its covering (encephalitis, meningitis, brain abscess);
* hemorrhage into the brain tissue or over its surface (resulting from direct injury at birth or later, or the rupture of an abnormal or diseased blood vessel);
* brain concussion from a blow on the head;
* brain tumor;
* congenital defects of the brain (including hydrocephalus and incomplete brain development);
* metabolic disorders which result in abnormally low blood sugar (hypoglycemia), low blood calcium (hypocalcemia), high blood phenylalanine (phenylketonuria);
* drugs and poisons (lead, strychnine, atropine). Commonly used drugs, including tranquilizers, if taken in excess or by persons with special sensitivity (idiosyncrasy);

* severe kidney disease (uremia);
* eclampsia, a relatively rare complication of pregnancy;
* high fever in children; and
* breath-holding spells in children.

When such a specific problem is diagnosed, the seizure is usually reported as the result of that disorder instead of epilepsy.



CONSULTATION—Parents should understand how important their children's problems are and cooperate closely with physicians to help control the seizures of the epileptic child. The same cooperation applies to adult epileptics.

At What Age Does Epilepsy Occur?

Epileptic seizures vary in appearance according to their types. Although seizures can begin at any age, statistics show that usually they will begin before age 21. According to a survey reported by the Epilepsy Foundation of America, 46.7 per cent of the seizures may be caused by conditions occurring during elementary and high school years; 30.1 per cent may occur by something that happened during the prenatal, natal, or neonatal stages, and during the years before the child enters school; 16.3 per cent arise from causes occurring during young adulthood; and 6.9 per cent are due to problems arising during middle or old age.

A few persons develop epileptic-type convulsions for the first time as a result of arteriosclerotic syndrome.

Quite a number of girls have their first seizures between the ages of 11 and 13 years, probably related in some - yet unknown - way to the physiological changes occurring in the body at that time.

The Grand Mal Seizure

Seizures are infinitely varied in form, but physicians recognize four main types - grand mal, petit mal, psychomotor, and Jacksonian (or focal). There are also a number of minor types.

A grand mal seizure is not diagnostic of epilepsy. The convulsions are wrongly used as a synonym for "epilepsy" because of their arresting appearances.

The grand mal attack is more common than other types of seizures. A bystander may feel sure that it causes great pain, but the patient is unconscious and does not suffer. However, there may be danger of injury from falling.



A NEAR NORMAL LIFE—Although there may be restrictions, the majority of epileptics can lead a nearly normal life when it comes to marriage and employment.

During a grand mal attack there may be a loud groan or cry, followed by sudden loss of consciousness, then generally tonic and clonic movements. In the tonic stage, there is boardlike rigidity; this is followed by quick generalized jerking movements of the clonic stage. Saliva may appear on the lips of the patient. His face may be pale, or may have a bluish or dusky tinge. Breathing may be heavy or jerky, or at times so shallow that it seems to have stopped altogether.

Recognition of convulsions dates almost from the beginning of recorded history. Lucretius (96–55 B.C.) wrote in **On the Nature of Things:**

> He foams, he groans, he trembles, and he faints;
> Now rigid, now convulsed, his labouring lungs
> Heave quick, and quivers each exhausted limb.
> Spread through the frame, so deep the dire disease
> Perturbs his spirit; as the briny man
> Foams through each wave beneath the tempest's ire...
> ...He raves, since soul and spirit are alike
> Disturbed throughout, and severed each from each,
> As urged above, distracted by the bane.
> But when, at length, the morbid cause declines,
> And the fermenting humors from the heart
> Flow back - with staggering foot the man first treads,
> Led gradual on to intellect and strength.

During attacks some epileptics bite their tongues and drool saliva they cannot swallow. Gradually the jerking decreases and the muscles relax. Such attacks may last a minute or less, or half an hour or more, and may be repeated many times a day, once a week, once a month, or only after several years.

When seizures recur so rapidly that there is no recovery of consciousness between them, the patient is in a condition known as "status epilepticus" - a medical emergency requiring immediate medical treatment.

The patient, after suffering a brief grand mal seizure, is normally able to resume his activity after a few minutes. Longer seizures usually are followed by deep "post-convulsive" sleep or coma. When this passes, he may have post-convulsive disturbances

including headaches, vomiting, mental confusion, difficulty in speech, even brief muscle paralysis, and sometimes strange behavior for a few moments or as long as several days.

Grand mal seizures are thought to occur in about 80 per cent of all cases of epilepsy. This type is easier to control than any other variety, except when onset is before the age of one year. Good control may be hard to achieve in infants. Complete control is usually possible in the majority of persons with grand mal seizures.

Petit Mal Seizures

Sally, a pretty eight-year-old, was first noticed by her parents to have "blank spells." She would stop what she was doing, stare for a moment with her eyes half-closed. If talking, she would occasionally stop in the middle of a sentence.

In a few moments she would recover. She would be confused for a minute but soon was her normal self. Her parents took her to their family pediatrician, who suspected epilepsy and referred Sally to a neurologist. He diagnosed Sally's "blank spells" as petit mal seizures.

These petit mal seizures are symptoms of a milder type of epilepsy. They normally are very brief - five, 10, or at the most 20 seconds in length. But they may occur often, sometimes 50 times a day or more. A person having a typical petit mal attack may appear merely to be staring into space, inattentive; there may be a rhythmic twitching of the eyelides or eyebrows; there may be a lackluster in the eyes, or a piercing, cold, dreamy, sparkling, calculating, inquiring, or accusing look. He may stagger or sway. Falling is rare. Previous activities are usually resumed immediately after the attack, as though nothing had happened. Some people lose bladder control and urinate during the fleeing moments of unconsciousness, but this is less common than with grand mal seizures.

The majority of petit mal seizures are said to occur in children four to eight years of age. Parents often disregard petit mal attacks in a child, supposing that eventually they will disappear. Usually they cease before or during puberty, and are almost unknown in

adult life. However, 50 per cent of the persons with petit mal later have grand mal seizures, too. For this reason, they often are started on medications for grand mal first. The medicines used especially for petit mal are added a little later. Unless the possibility of grand mal is understood, there may be some confusion to the patient and his parents about the treatment.

Focal Seizures

Some types of epileptic seizures can be traced to the abnormal electrical discharge in one area of the brain - or focal point. These are called focal seizures.

During such seizures, only one part of the body is involved. The attack may be "motor" with jerking, or sensory - with tingling or loss of feeling in some part of the body. Often there is no loss of consciousness.

Jacksonian Seizures

In this type of epilepsy, the overactive neurons are located in the part of the brain governing movements of certain muscles. A seizure generally starts in the toes of one foot, the fingers of one hand, or in the corner of the mouth. Suddenly the affected part trembles violently. As more and more neurons become affected, the trembling or numbness marches upward. It may stop at any time, or in a few seconds or minutes cross to the other side of the body. Then the person loses consciousness and has an attack similar to that of a grand mal seizure.

Psychomotor Epilepsy Seizures

A type of epilepsy more common in adults than in children (though it appears in all ages) is the one generally known as psychomotor epilepsy. This is because the abnormally discharging cells act upon the mental processes as well as upon muscles.

Description is difficult because the spells are so varied. In general, we can say that during an attack there may be one or more repetitious, automatic movements which appear purposeless

and rather awkward. Speech involvement may result in repetition of words, which may be incoherent, mumbled, or inappropriate. Bizarre behavior may include temper tantrums, belligerent behavior, even violence, sleep walking or wild running. Forms of the attack may include amnesia, automatisms, illusions, hallucinations, mania, depression, and psychiatric disturbances with delusions.

Psychomotor seizures may include hallucinations of sight, hearing, and smell - as the beginning of a seizure. This is known as the aura of the attack.

Conciousness may be impaired to some degree during these spells. Recollection for events which occur during them is partly or wholly lacking. Duration of the attack may vary from seconds to hours or even days.

Diagnosis may be very difficult because some of the same peculiar conduct may result from behavioral disorder rather than epilepsy.

Medicines now available successfully control attacks in only about 25 per cent of the cases.

During psychomotor attacks, people have been known to have strange behavior:

* people may search for objects during a seizure;
* a girl working in a candy factory would stuff chocolates into her mouth;
* a man, who during an attack asked his employer for a raise and said, "or I'll quit," got the raise;
* one patient acted intoxicated and got into fights;
* another patient embraced a strange woman in a park, followed her into the women's toilet, came out, and then boarded a bus;
* one person would jump into the river with his clothes on after having a beer.

Minor Motor Seizures

Hypsarrhythmia, infantile spasms, lightning majors, salaam attacks, and akinetic seizures are other names for minor motor seizures.

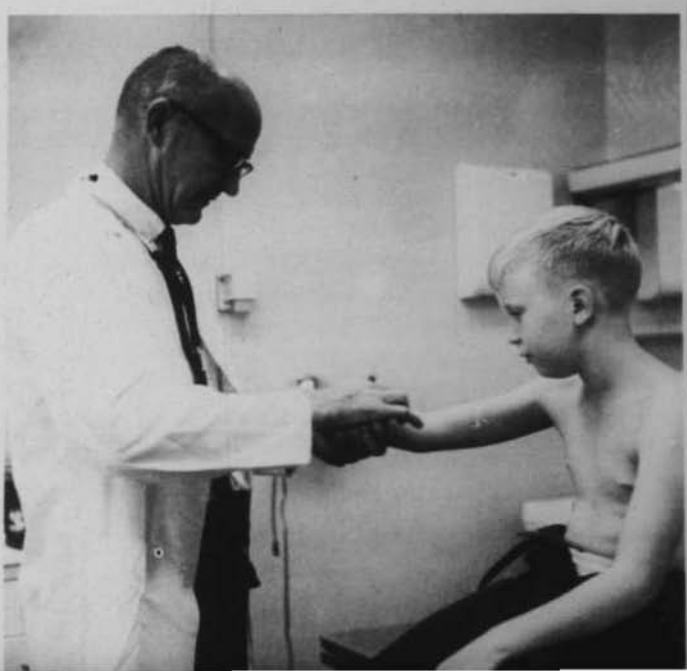
Typical spells may begin with a short cry or laugh, then there is a sudden bowing of the head. At the same time, the upper extremities are extended and the thighs are drawn up toward the abdomen. In some cases there may be only head nodding or sudden loss of all muscle control, which results in a fall, with almost immediate recovery.

Attacks last only a few seconds, but may be repeated very often, even 50 or 100 times daily, and sometimes in a series, one right after another for five minutes or more.

The akinetic variety is the type in which bodily injury is most apt to occur. In this type of seizure, the voluntary muscles lose their tone, and without warning the person collapses limply. If sitting, he will tumble to the floor. There is usually little clonic jerking. Most attacks occur without warning; there is no tongue-biting or changing of color.

Involvement of only the trunk muscles gives the "salaam" epilepsy its name. In this, the person loses control only of the upper part of his trunk.

The minor motor variety is seen almost entirely in young children. Onset is usually before their first birthday, especially around the third or fourth month. Fortunately only about four or five per cent of all epileptics have this type. It is the only one in which there is real concern about mental retardation. Unfor-



EXAMINATIONS—A number of tests are necessary to diagnose epilepsy. These include a physical examination during which the reflexes are checked.

tunately minor motor epilepsy is often associated with mental retardation, which is frequently severe. It may already be evident when seizures begin or may show up awhile after their appearance. Persons with other types of epilepsy will compare favorably with non-epileptics in intellect, with essentially no greater incidence of mental retardation.

Epileptic Variants

Studies have shown that certain recurrent complaints are due, occasionally, to epilepsy. Included are such disturbances as abdominal pain, headaches, vomiting, or dizziness. These are not "seizures" in the usual sense which are characterized by interruption of consciousness.

Terms applied include automatic, hyothalamic, thalamic, diencephalic, abdominal or non-convulsive epilepsy, and epileptic equivalent or variant.

The "Aura" — A Kind of Warning

Some people who have grand mal or psychomotor seizures have a warning of impending seizures. This is called an "aura" meaning a breeze or current of air. Those who have petit mal seizures do not have these auras because their attacks come quickly and are over within a short time.

The warning may vary from some special scent or taste to a sound of music or a vague bodily sensation, recognizable but not readily described. It may be defined as that portion of a beginning seizure of which the patient has memory. Patients may feel dizzy, giddy, or have periods of lightheadedness, numbness, buzzing in the back of the head, or a change in temperature level.

Although these sensations are described by only about one per cent of the patients, such warnings have been noted over the centuries. Caesar, according to the writer, Suetonius, felt an aura come over himself at the battle of Thapsus in Africa which gave sufficient time for him to be carried into a tower. The aura was described as a tingling and a trembling of one foot. It spread upward, suggesting a cortical (brain) lesion arising from his Caesarean delivery, or from syphilis. Mohammed had an aura - a depression in spirit during which he heard tinkling in his ears or the swarming of bees.



ATTENDING SCHOOL —Whenever possible, Florida's epileptic children can attend school with others their own age. Most epileptics compare favorably with non-epileptics in intelligence.

Auras are valuable to the physician as well as to the patient. They may last long enough to give the patient time to reach a less hazardous spot before losing consciousness. They may be specific enough, in type or location, to give the physician a clue about the origin of the seizures within the brain. A patient may fail to take advantage of his warning because he may not understand its meaning, his judgment may be blurred, or he may try to "fight off" his seizure by walking about.

Diagnosing Epilepsy

It may take quite a few examinations or tests to find out what causes a person's seizures. The correct diagnosis may be a complicated procedure. Sometimes studies have to be repeated more than once before a diagnosis is reached.

There are a number of conditions in which seizures may be only one of the symptoms. The physician needs to know if the patient has had a head injury, has been running a fever, was recently exposed to someone who was ill, or is taking medicines of any kind. He will determine whether the seizure is a symptom of an acute infection or other illness, so he can treat and correct that problem, or is due to primary or secondary epilepsy. It is important that parents (and patients who are old enough) cooperate to provide whatever background data the physician requires. They

should not hesitate to volunteer information if it seems at all unusual.

A lesion, for example, may be the cause of abnormally discharging of neurons - which in turn cause the seizures. In ordinary language, a lesion is an injury; but in medical terminology, it is an area of the body or the tissues altered by injury or disease. It may be a congenital malformation, a scar formed within the brain after a bullet wound or other injury, or damage from a childhood infection. One example of an infection is meningitis - an inflammation of the membranes covering the brain. Another example is encephalitis, an inflammation of the brain that may be associated with measles, mumps, whooping cough, and some other diseases, or occur as a primary infection, such as Eastern Equine or St. Louis Encephalitis.

Neurosurgeons may occasionally find brain tumors or abscesses that are responsible for seizures. Sometimes they find evidence of damage that happened during a difficult birth, although the seizures may come along much later in life.

Very often the seizure is over before the physician is reached. If the physician cannot observe it personally, he will want as accurate a description as possible of all that was observed, and the order in which it happened. Things which seem trivial may actually be quite important: which part of the body was involved first? When was consciousness lost, if at all? Parents, relatives, teachers or the patient, even a young child, may contribute helpful information.

Physical examinations are essential. These have to be thorough, including a neurological examination - during which reflexes and sensations will be checked and other reactions evaluated.

Laboratory procedures include blood studies and urine tests may provide important information. The physician will want a routine blood count for evidence of infection or anemia. He may request special studies of certain substances found in the blood to see if the levels are unusually low or high. He may test for abnormal substances, such as poisons. Urine tests can reveal infections or other kidney disease or certain poisons.

Lumbar puncture may be made to examine the cerebrospinal fluid which surrounds the brain and spinal cord. A special needle is inserted carefully into the lower part of the back, slipped between the vertebrae just far enough to reach the fluid so a specimen can be removed. Examination of this fluid is essential to the diagnosis and proper treatment of such infections as meningitis and encephalitis. Very sick children often fight this procedure more because of fear than pain and because they must be held very tightly so the doctor can insert the needle accurately.

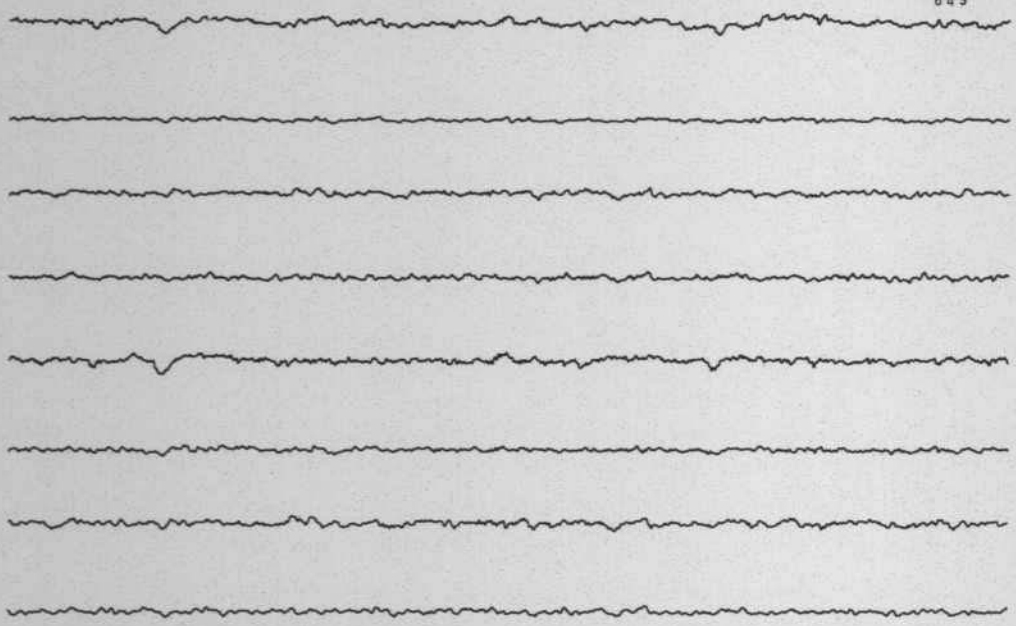
Brain Waves and Other Tests

Part of the diagnosis of epilepsy is the recording of the brain waves by an electroencephalograph (EEG). The millions of cells in the brain give off small amounts of electrical current. These electrical impulses are recorded in a series of wave patterns on a moving strip of paper. This record is called an electroencephlogram.

Recording the brain waves is painless and safe. You sit or lie down. A number of small discs (called electrodes) are secured with a harmless sticky substance to various regions of the scalp. Sometimes bands or caps are used. Fine wires lead from the discs through a series of radio-like boxes which amplify the currents coming from the brain. These currents move a series of pens on the moving band of paper and record the brain currents as a series of waves. Each wave indicates an increase in the voltage. The higher the waves and the faster they come, the greater the electrical activity of the brain's nerve cells.

A certain "normal" wave pattern is expected from the various areas of the brain. When there is a history of seizure disorders, the wave pattern is usually normal at some time. The pattern varies according to the type of seizure disorder and helps to distinguish between them.

To help demonstrate the abnormal patterns, it may be necessary to have the patient hyperventilate (breathe deeply) for a few minutes. Often this may bring on a seizure, especially in those with petit mal. The machine will be able to record the brain waves during a seizure and help define the problem. Sedatives may be given if a sleep-tracing is needed (for those persons whose



NORMAL BRAIN WAVES—Regular patterns are made during a brain scan by an electroencephalograph.

seizures occur only during sleep). Photic stimulation (with rapidly flickering lights) may also produce important changes in the wave patterns.

An electroencephlogram has no effect upon the brain. It records nothing but the electrical activity - not the thoughts - nor does not test the mentality. Nevertheless, many young children, even some older children and adults, are frightened of the EEG test. It is important for parents or other relatives to understand the harmless nature of the test and provide reassurance.

Ordinary X-ray studies rarely give useful information about seizure disorders. However, they may occasionally show evidence of brain tumor, results of an old fracture, or abnormal blood vessels within the skull, calcium deposits, or other abnormal features which will lead to diagnosis. The doctor may ask to have these tests made. Special X-ray studies may be done if there are indications that there is a space lesion, such as a brain tumor.

A pneumoencephalogram may be made. This special study is made by withdrawing some of the cerebrospinal fluid, which surrounds the spinal cord and brain. This is usually removed through a lumbar puncture needle, and air or oxygen injected in its place. The skull is then X-rayed. The air should make the cavities within the brain and the space around it show up so it is

possible to tell if they are enlarged, misshapen, or narrowed. Rather severe headache may persist for the next several days.

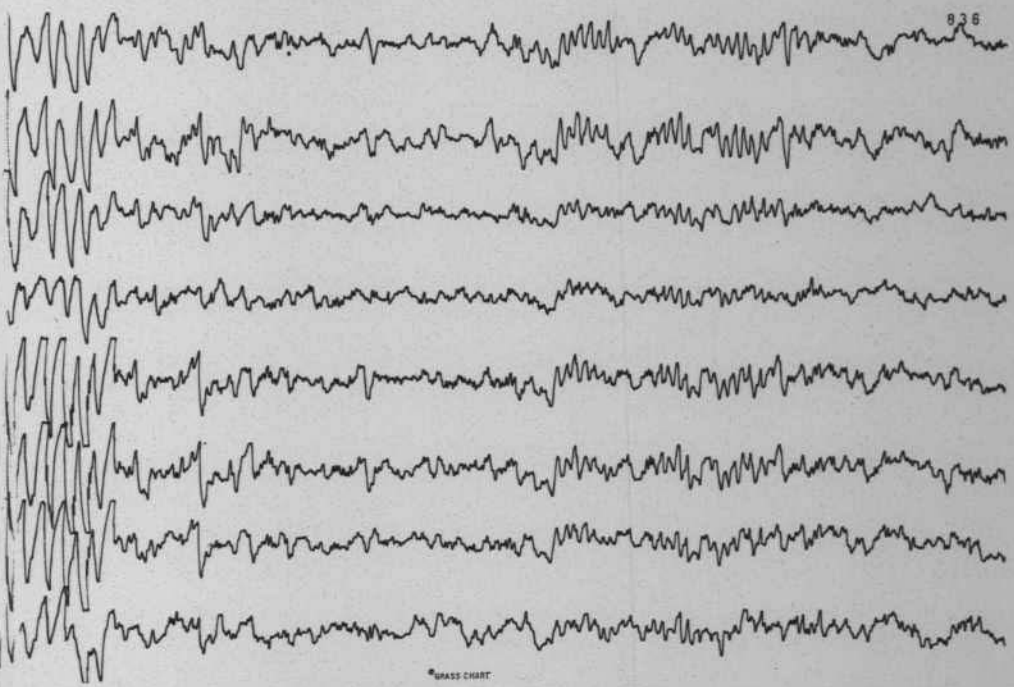
Another test, called cerebral angiograph, is made by introducing an opaque liquid into the circulation, where it will go directly into the arteries of the brain while X-rays are taken of the head. Narrowed or otherwise abnormal vessels, or vessels of an unusual course, may show up in the X-rays so the abnormalities can be recognized.

The physician will decide what tests must be done. Finally he combines information from the history, physical and neurological examinations, and the various tests to arrive at a diagnosis. If the diagnosis is epilepsy, the history and electroencephalogram often are the most helpful. If all findings seem normal, repeated tests may be necessary.

Treatment for the Epileptic

Jim was a high school sophomore, a superior student, and a good athlete. But without any apparent reason, his studies

A SEIZURE PATTERN—A seizure occurred during a test to create these irregular waves. This test may help the physician to define the cause of the seizures.



became harder for him and he seemed to have blank spells. One morning, he fell to the floor in a convulsion. His parents were alarmed; and they were more alarmed when the neurologist at the hospital told them at the end of the series of examinations that Jim's trouble was epilepsy.

The neurologist told Jim's parents there were two parts to his treatment: care during a seizure and a long-term medical management. Occasionally - a few times out of a hundred - seizures are caused by some condition affecting the brain which can be relieved by an operation or other specific treatment. But the most effective way of controlling seizures is with medicine.

There was little the parents could do during Jim's seizures. During long attacks they could protect him from hurting himself against hard or sharp objects or glass. They were told not to turn him on his back, but place him on his side so the saliva or vomited material could run freely from his mouth - rather than being inhaled into the trachea or lungs. They loosened his tie and collar.

If he were biting his cheek or tongue, they would insert between his teeth a rolled up handkerchief, folded belt, or flat wooden item, such as tongue depressor padded with soft cloth or gauze. His parents never used an unprotected metal item, such as spoon handle; they never wedged objects between the front teeth: a broken tooth, inhaled, could have become a more serious problem than the seizure.

They allowed him to wake naturally - never dashed cold water on him, put him in a hot bath, or tried to awaken him. As consciouness returned, they tried to spare him from embarrassment and gave whatever help he needed.

Longer attacks required medical attention. Jim's parents were advised to call their doctor before moving him. If they could not reach the doctor, they were to take him to the emergency room of the hospital.

The neurologist advised them to stay calm and cool-headed; it was the best thing for Jim.

The physician's choice of medicine to help control the seizures was based on the type of epilepsy Jim had and the safety of the medication. Some medicines may have been more dramatic

in their results, but they cause side-effects which could be very upsetting to Jim; or they could damage the kidneys, blood-forming organs, or other systems of the body.

In order to find the right combination of drugs, the neurologist had to try several anti-convulsant drugs - alone or in combination - over a continuing period. He had to adjust the dosage before he could get a good seizure control without making Jim too drowsy to go to school or to work, or participate in his usual activities. It was better to settle on a drug, or combination of drugs, and a dosage that did not completely control the attacks, but did not give Jim such side effects as severe drowsiness, irritability, or a staggering gait.

Jim was required at first to have frequent physical examinations and tests of blood, urine, and at times liver function. Later the examinations were scheduled further apart. He had to take the medicine exactly in the amount prescribed and at the times specified. He was not allowed to run out of medicine. Jim needed good supervision from his physician and close cooperation from his parents. He was treated successfully and had very few seizures for a couple of years. Then finally his seizures stopped altogether.

Modern anti-convulsant medicines are effective in controlling most epilepsy. Approximately half of those taking medicines are so well controlled that they are seizure free or nearly so; another 35 per cent are sufficiently improved to live fairly normal lives; only 15 per cent are helped very little. These persons may be seriously handicapped by seizures. In the latter group some also may be mentally retarded; some may require institutional care. However, the majority can function quite well between seizures if given the chance.

The Life of an Epileptic

Epileptics and their parents need to realize that, even with seizures controlled or stopped for several years, the disorder imposes some restrictions on various aspects of life.

The greatest handicap the controlled epileptic must face is public ignorance and adherence to old false beliefs about the condition of epilepsy. He may be regarded as "different" and

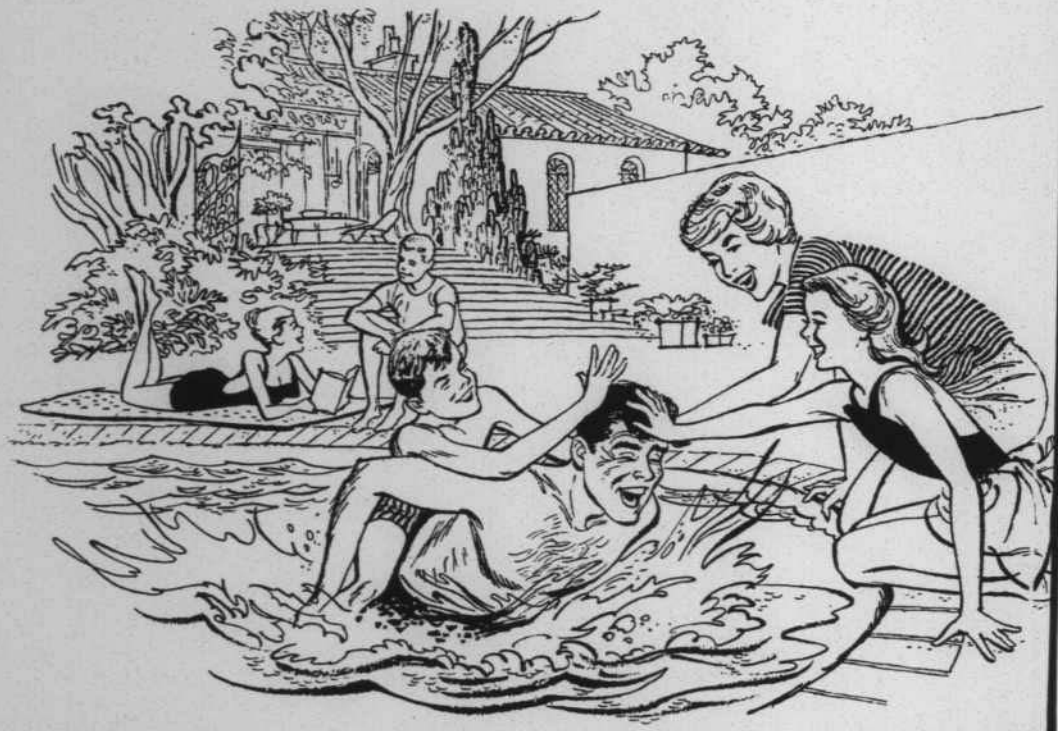
occasionally denied some social, recreational, and employment opportunities - often needlessly. Attitudes are changing - but very slowly.

The majority of epileptics will be quite "normal" between seizures - if they are allowed to be. The epileptic, adult or child, must be limited in the participation of some work and play activities for his own safety. However, pampering and lax discipline usually do the epileptic more harm than good. Like any other person with a chronic disorder the epileptic can easily develop emotional problems, fearing he may have a seizure in public, or may be shunned because of his disease. This also happens to the physically crippled, the deaf, and many other handicapped persons.

Home is the one place where the epileptic needs to be treated the same as everyone else - loved, disciplined, petted, and given

---

ENJOYING LIFE—The well-controlled epileptic can be allowed to swim, when accompanied by an experienced swimmer who knows about the seizure problem. Such activities may be carried out when approved by the physician.



chores and responsibilities to the same extent as other family members - unless the physician advises otherwise.

There often arises the question of bicycle riding. It is suggested that if a child already knows how to ride a bicycle when the seizures develop, and they are well controlled, he be allowed to ride the bicycle again, except in traffic. If he has not learned before seizures start, it is practical to discourage the idea and divert his attention to something else.

No epileptic should swim alone or in the company of a poor or inexperienced swimmer - or one who is unaware that his companion may develop a seizure. Any person - epileptic or not - who does not know how to swim may drown for the lack of elementary swimming skills. The well-controlled epileptic should be allowed to swim in relatively safe waters when accompanied by an experienced swimmer who knows about the seizure problem.

The final decision about bicycling, swimming, and strenuous sports must be made by the family and the epileptic's physician who are best qualified to make these judgments.

Education Is Essential

Whenever possible, the epileptic child should be allowed to attend school with playmates of his own age. Fortunately in Florida, the policy of public schools is to include epileptic students in regular classes unless frequency of seizures or mental impairment makes normal participation impossible. Students may be enrolled in special education classes when their seizures are not well enough controlled and learning capacity is not adequate for placement in regular classes. Teachers are encouraged to assume the same attitude recommended for parents and the rest of the family - no special favors for the epileptic.

School authorities should be advised when an epileptic student enters any grade. The type, duration and frequency of seizures which may be expected and the usual care given during an attack should be explained to the teacher and other appropriate

school personnel. This enables them to handle an occasional seizure with composure, meanwhile reassuring other pupils.

School authorities usually follow the physician's recommendations about an epileptic child's participation in sports. Since epileptics often will have more seizures when asleep or inactive than at othertimes, it is generally recommended that they not be denied normal recreational participation except for activities involving height, especially.

Employment, Marriage, and Automobile Driving

When it comes to employment and marriage, the adult epileptic can lead a nearly normal life.

The proper job for the person with epilepsy is the one he can do best - provided that if a seizure occurs, neither he nor his fellow workers will be endangered. While the employment picture for the epileptic is improving, many employers need to be better informed about the acceptability of epileptics as employees.

The Florida Employment Service evaluates each case on its own merits. It has placed many epileptics, who are well controlled, in jobs for which they were suited. Naturally they are not placed in areas where they could fall into machinery or harm themselves or other workers.

Persons with controlled or infrequent seizures can serve as stenographers, bookkeepers, photographers, librarians, gardeners, adult educators, artisans of many types, or in specialities of the law or medical professions requiring limited patient or client contact. Vocational guidance counselors can be of great assistance in helping the epileptic make right decisions as to a career.

Generally there are no reasons why the epileptic should not marry. A couple contemplating marriage should consult a geneticist or neurologist concerning the risk of their children's developing seizures. In some cases the risk will be very slight; in others, it may be higher. Some epileptics have such severe forms of epilepsy that they could not help but be a burden to the person they marry - so they would do well to remain single. This applies also to those who are severely mentally retarded.

Enough is known about epilepsy to lead many experts to believe that heredity has only a small role in epilepsy, particularly when the seizures can be traced to an injury. The likelihood of an epileptic producing an epileptic child is not much greater than for the non-epileptic. Some persons who have seizures may not wish to take this small chance, but in general the decision whould be left up to them.

The question of driving, like marriage, should be discussed with a physician. Regulations vary from state to state. Some have laws which make it illegal for epileptics to drive an automobile; others, an epileptic can be licensed when seizures have not occured over a period of time (for example, three years).

In Florida, the Department of Public Safety requires that persons who are subject to sudden attacks of "unconsciouness, dizziness, epilepsy, catalepsy, seizures, and fainting spells, or similar disorders," must obtain approval from the Department of Public Safety before applying for a license. The applicant with such a disorder must submit a medical report from a licensed physician that states the physician believes the applicant can drive safely. This is reviewed by the Department of Public Safety's medical board before a decision is made.

In many cases the physicians must depend, to a great extent, on the word of the applicant for the date of the last seizure. There is no doubt great temptation for those who have an occasional seizures to minimize the facts. This is unwise and unfair to the epileptic, his passengers, and others on the highway. On the other hand, there are many epileptics who have been seizure free for several years and who will remain so. Many experts agree that these individuals can be licensed safely. Fortunately for them, Florida's statutes are not unreasonable.

The Epileptic and the Division of Health

The Division of Health has expanded its drug program to include several drugs, or combination of drugs, which can be furnished to the medically indigent epileptic patient.

In order for the epileptic patient to receive these drugs, his private physician, or the attending clinician at the county health

department, needs to provide a medical evaluation, diagnosis, prescription for the medication and information on the follow-up of each patient being enrolled in the drug distribution program.

A blood test will be needed, perhaps weekly at first, to determine the white cell count. A change may indicate excessive dosage or poor tolerance for the medicine. The physician should report immediately any toxic reaction and notify the Division of Health if he changes or stops the patient's medication. Because of the sensitive nature of epilepsy, the reports will have the same confidential relationship as many other Division of Health programs. The supplying of drugs to the medically indigent epileptic is just a first step of an epilepsy control program.

Hope and a Normal Life

The affliction of epilepsy is not amusing to the epileptic and his family. Too often the uninformed may treat him as an outcast. He may lose his job if he has a seizure. He may be forbidden to use a school gym, to splash in a swimming pool, to enroll in a certain club - even though his epilepsy is well controlled. His parents and physician need to see that such actions do not alienate or disturb him.

Parents unthinkingly may say, "We never dreamed that such a thing could happen to us . . . or our child." The majority will add, "There has never been a case like this on either side."

But the epileptic and his family should remember that there are more serious diseases and ailments than epilepsy. There are children and adults who never will be well, will never walk, may often be in pain - who have diseases that are fatal. Death from epilepsy is rare, even from accidents due to seizures.

The epileptic should not give up hope or his faith that persistent medical researchers will find a cause and a cure for his epilepsy. In the meantime, he should cooperate with his physician and parents, take his medicine on schedule, be aware that if he does not take his medicine, or if his seizures are not well controlled, he could have one at any time.

The one important goal of the epileptic is to lead as normal a life as possible.

FLORIDA HEALTH NOTES



VOLUME 65 — NO. 4

APRIL 1973

YOU and Diabetes

FLORIDA STATE LIBRARY

We would like to say at the beginning of this issue of **Florida Health Notes**—in the middle and at the end—that diabetes is only one of the very many reasons why you should have a regular physical examination. In this way the disease can be detected at an early stage. If you do not have routine checkups, the diabetes may have progressed to a severe state before it is discovered.

This issue of **Florida Health Notes** will tell you about diabetes, what causes it, its complications, and treatment, and what the Division of Health of the Department of Health and Rehabilitative Services is doing to detect diabetes in Floridians and treat those who are medically indigent. We will also tell you about the summer camp for children and youth.

But to get back to diabetes. What is your DEI—Diabetes Expectancy Index? See if any of the questions below apply to you:

	YES	NO
ARE you related to a diabetic?	☐	☐
ARE you grossly overweight?	☐	☐

SCREENING PROGRAMS—The Division of Health and county health departments, with the assistance of volunteers, hold diabetes screening clinics any place—even in parking lots.



YOU and DIABETES

When you hear that a person is a diabetic, what do you think? That he must be inconvenienced by having to take shots or stay on a diet? Or that maybe he was lucky to have found out that he has it.

The famous physician, Sir William Osler, once said, "The way to live a long life is to get a chronic disease and take good care of it." This is certainly true of diabetes.

Many people believe that Diabetes Mellitus (sugar diabetes) is caused by such things as "eating too much sugar," "breaking an arm," "being in close contact with a diabetic" (catching it like the flu or a cold) and other myths too numerous to mention. The most common of all statements heard at diabetes detection clinics is, "If I have it (diabetes), I don't want to know because I don't want to take 'shots' every day like my aunt."

These statements are not foolish sounding to the people who say them. They are signs that people still do not understand what Diabetes Mellitus is, what causes it to occur. Diabetes is never cured, but with it under control, the diabetic can enjoy a long and satisfying life.

Some people in Florida do not always seek care when symptoms of diabetes appear, or do not have yearly checkups. This is unfortunate when you consider that diabetes was the eighth leading cause of death in 1972. It accounted for 1,332 deaths in Florida. It is estimated that approximately 150,000 Floridians have diabetes —and 75,000 do not know it. This number is expected to climb in our state due to its popularity as a retirement area, for persons over 45 years of age are more likely to show evidence of diabetes. However, persons of any age, including children, may have the disease.

ZEPHYR-BLOWN—(Cover photo)—Campers at the Florida camp for youth and children with diabetes enjoy a sail on the lake. This is just one of the many activities at the camp near Gainesville.

ARE you 45 years of age or over? ..... ☐ ☐

Mothers, did any of your children weigh over nine pounds at birth? ..... ☐ ☐

An answer of yes to any one or more of the above questions should alert you to be more aware of diabetes as a potential problem you may have to face some day.

Diabetes Through The Years

One of the diabetic's symptoms—frequent excessive urination, was described by the Egyptians 30 years before the birth of Christ. Two additional major symptoms—excessive thirst and hunger—were described about 600 A.D. Along about the 16th Century, a physician, Thomas Willis, began treating the disease by putting his patients on a strict diet. In the 19th Century, diabetics were found to have sugar (glucose) in their blood and urine. Another early researcher found that certain patients, if they exercised a great deal, could eat more food without increasing the body's sugar load. Today some diabetic patients respond to treatment involving only diet and exercise. Then it was discovered that the pancreas was directly related to diabetes, resulting from a lack of a substance (insulin) secreted by this organ.

Two Canadian physicians, Frederick Banting and Charles Best, were the men who discovered how to extract and use insulin. A 14-year-old diabetic was given the first injections.

Today, there are other drugs taken by mouth which help some diabetics maintain control. But the treatment of a diabetic patient always must be based on a balanced diet, exercise and insulin or oral drugs as directed by a physician.

FLORIDA HEALTH NOTES

Published monthly by the Division of Health (Wilson T. Sowder, M.D., M.P.H., Director) of the Florida Department of Health and Rehabilitative Services. Publication office, Box 210, Jacksonville, Florida 32201. Second Class Postage paid at Jacksonville, Florida. Printed since 1892, this publication is for individuals and institutions with an interest in the state's health program. Permission is given to quote any story providing credit is given to the Division of Health. Editor: Robert A. Schoonover, M.A.
Post Office Form 3579 should be mailed to Box 210, Jacksonville, Fla. 32201



POPULAR PLACE—People crowd around the registration table of a diabetes screening program conducted at a community fair.

What Is Diabetes?

Diabetes occurs when there is a lack of effective insulin and the body cannot use, or burn sugars and starches for energy. This allows the glucose (sugar) which the body uses as fuel to remain in the blood. This glucose is the principal quick source of energy for our bodies—just as gasoline is the source of energy for our automobiles. Insulin is as necessary to the normal burning of glucose as air is to the burning of fuel in a car's engine.

In a normal person, insulin is made in the islet cells of the pancreas and is secreted into the bloodstream. This process allows the cells of the body to burn or change the glucose into energy and controls the level of sugar in the blood, keeping it within normal limits. The higher the energy requirements, the more insulin and glucose are needed to meet the body's demands. This increased energy requirement may be due to sports activities, physical labor,



and injury, a shock, or just plain old worry about the problems of daily living. In the normal person these things do not cause too much of a problem of control for the body's various systems. This is not true of persons who have diabetes.

Technically, diabetes is an inherent impairment or inability to use carbohydrates (sugar), protein (meat) and fats properly because there is a lessened amount or total lack of insulin put out by the body, or the insulin secreted by the pancreas cannot be properly utilized by the body. This results in increased glucose in the blood and urine. As a result, extra sugar which cannot be burned collects in the blood. This condition is known as hyperglycemia (high blood sugar). After a long enough period of time (weeks, months or even years), the glucose concentration in the blood becomes so high that it "spills" into the urine and is passed out of the body. Along with the glucose, many vital chemicals (potassium—for one) which the body has to have in order to function properly are lost. These high levels of glucose also cause hardening of the arteries (arteriosclerosis) and can damage the kidneys as the sugar is filtered ("spilled") from the blood and into the urine. High concentrations of urine glucose (glycosuria) can also cause infection and itching of the genital organs—especially in women and girls.

To go back to that little questionnaire, we do know that diabetes is more common in relatives of diabetics, mothers who have

babies weighing over nine pounds, persons over 40 years of age, and those who are overweight. It is also more common in women than in men.

Children may occasionally have diabetes and five per cent of all diabetics are juveniles. They usually become acutely ill. It can occur in very young children. These cases may be very difficult to "stabilize" with diet, exercise and insulin. Emotional upsets can cause the "juvenile" diabetic to lose control of his condition.

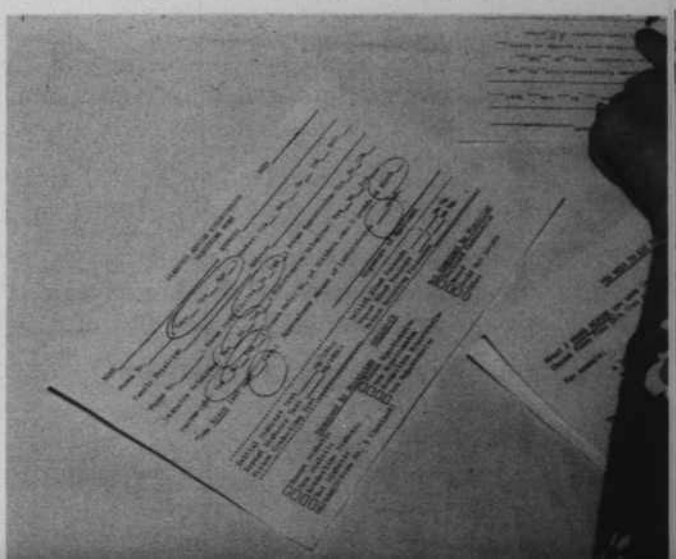
After the age of 30, the "adult" type of the disease appears and as a rule the patient is more stable and more easily treated.

Two of the major factors in diabetes are heredity and overweight. For example, if a diabetic marries a diabetes "carrier" and had 10 children, approximately seven of their children would become diabetics (if they lived long enough) and three might pass the disease on to their children.

Overweight apparently puts additional demands on the pancreas for insulin. Most "adult" diabetics are overweight at the time they develop the disease. Stress, an accident, a severe illness and emotional upsets may also produce symptoms of full-blown diabetes without warning.

Symptoms Of Diabetes

A history of weight loss, weakness, loss of strength, increased appetite, thirst, frequent urination, visual (eyesight) disturbances and recurrent infections are regarded as typical symptoms of the



FIRST STEP — (opposite page) A Floridian gives a little medical history in preparation for participating in a diabetes screening program. The registration form (right) has questions about "diabetic relatives," "overweight," "last meal," and "number of children weighing over nine pounds at birth."

disease. Late symptoms of untreated diabetes may be diabetic coma, leg pains, foot trouble, ulcers, skin infections, blindness and gangrene of the foot or leg.

Complications

Diabetic coma and insulin reaction are two major complications. "Old diabetics" soon learn to recognize these conditions and know what to do. In the first, prompt hospital treatment is usually necessary. In the second, orange juice or glucose may do the trick.

Signs, symptoms and physical conditions include:

	Diabetic Coma	Insulin Reaction
Behavior	Drowsy	Excited
Breath	Fruity odor	Normal
Breathing	Deep, Labored	Normal to Rapid
Hunger	Absent	Present
Onset of Condition	Gradual	Sudden
Skin	Flushed, Dry	Pale, Moist
Sugar in Urine	Large amounts	Absent or slight
Thirst	Present	Absent
Tongue	Dry	Moist
Vomiting	Present	Absent

Other complications are:

* Diabetic retinitis is the second leading cause of blindness in Florida. Once the retina (inner lining of the eye) is destroyed, there is little treatment that is helpful.

* Arteriosclerosis (hardening of the arteries) is another common complication and may result in heart disease.

* Kidney troubles, such as hardening of the kidney vessels, and urinary infections are often seen in diabetics.

* Involvement of the nerves may be very painful in the form of diabetic neuritis (especially of the hands and feet), but after

the diabetic is stabilized this usually disappears.

The Search For Diabetics

Approximately three per cent of the patients who visit private physicians' offices are diabetics. Many will be picked up on a routine blood sugar examination. Blood relatives of diabetics should be checked at regular intervals. Hospitals often routinely test all their new patients for this disease, and when they do, will discover some previously unknown diabetics.

Persons over 45 years of age, those overweight, and mothers who have had babies weighing more than nine pounds are all suspects and should be checked.

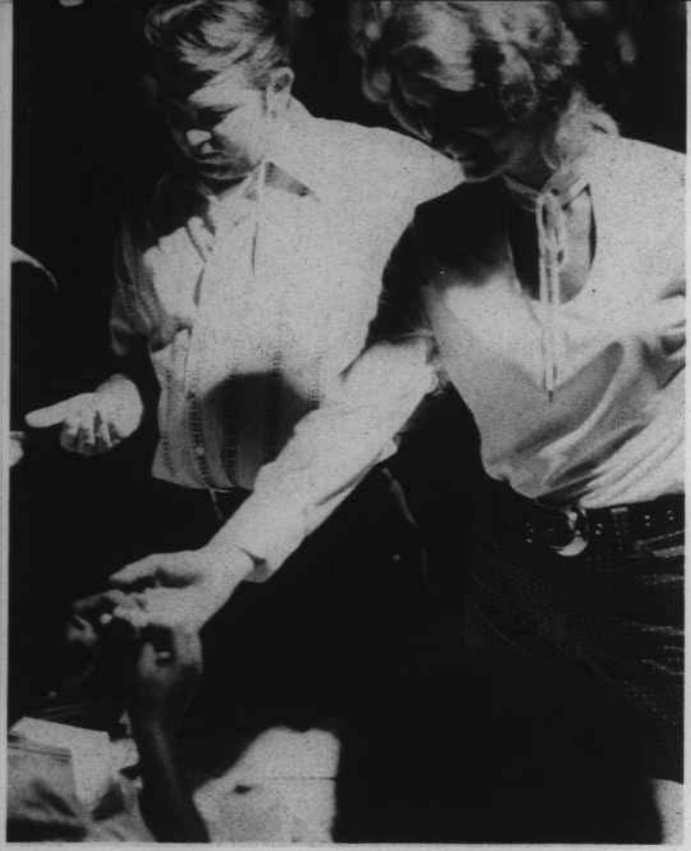
Detection programs offer a simple blood sugar test for diabetes and high blood pressure. For example, of 41,482 persons given diabetes test in Florida in 1972, 1,377, or 3.3 per cent, were referred to their private physicians because they had high blood sugars.

A Normal Life

A diabetic can do practically everything that anyone else can do—except to get off his diet. He can be a good employee; perhaps an outstanding athlete, an excellent parent, a politician, and a contributor to community life. A great deal depends upon the diabetic's adherence to a routine as prescribed by his physician whom he must see at regular intervals.

A Permanent Diet

A diabetic's diet is rarely temporary but must be followed for a long time. It should fulfill the following requirements: keep the diabetic as well and strong as possible; maintain his weight at the



SECOND STEP—The next step is having some blood drawn from a finger.

right level for his height and bone structure; and above all, his diet should consist of foods that are pleasant and interesting. Diabetic diets need not be monotonous or boring. On the other hand, diabetic diets are sensible, well balanced, can be tastily prepared and are good for all members of the family.

The family physician will prescribe the proper diet and usually refer his patient to a nutritionist or dietitian who can teach the patient how to interpret and follow his diet. The diabetic must eat what is specifically on his diet because it is tailored to his individual needs.

Although one ordinarily thinks that only carbohydrates are restricted on a diabetic diet, the amount of calories, protein, fats, and other nutrients must also be controlled. Diabetic diets often categorize foods into the following groups: meat, milk, vegetables, fruits, breads and fats. Each category has a particular amount of carbohydrates, protein, fat and calories for a specific portion. This

allows more freedom in selecting the specific foods within each group to be eaten.

The diabetic must eat his meals equally spaced each day to maintain a steady intake of food (calories) to balance the insulin dose. In some cases, he may be advised by his physician to divide his food into more than three meals a day, including a meal or snack before going to bed.

Regular Exercise

The amount of exercise that a diabetic can take is usually dictated by his physician. Usually a person who is normal in every way, except for his diabetes, can do almost any kind of exercise he wants to do. Regularity is the key word. Not a lot one day and very little the next. One word of caution—diabetics should not do a lot of exercise just before meals because this is when their blood sugar may be lowest. To do so is to invite an insulin reaction. This may happen if the diabetic takes his insulin at a regular time and then follows it by heavy exercise. To avoid this, it is best if the diabetic eats something before performing the exercise in order to provide himself with the necessary sugar for the extra energy he would need.

The Use Of Insulin

Insulin is manufactured from the pancreatic glands of cattle, hogs and sheep. The first insulin had to be given several times a day to sustain the blood level of the patient. If he was given a large dose at one time, he would go into insulin shock. Later long-lasting insulin was developed which could be given once every 24 hours.

Here are a few facts about insulin, this lifesaving drug: There are three kinds of insulin—rapid acting, intermediate acting, and long acting—administered according to when they begin to act

allows more freedom in selecting the specific foods within each group to be eaten.

The diabetic must eat his meals equally spaced each day to maintain a steady intake of food (calories) to balance the insulin dose. In some cases, he may be advised by his physician to divide his food into more than three meals a day, including a meal or snack before going to bed.

Regular Exercise

The amount of exercise that a diabetic can take is usually dictated by his physician. Usually a person who is normal in every way, except for his diabetes, can do almost any kind of exercise he wants to do. Regularity is the key word. Not a lot one day and very little the next. One word of caution—diabetics should not do a lot of exercise just before meals because this is when their blood sugar may be lowest. To do so is to invite an insulin reaction. This may happen if the diabetic takes his insulin at a regular time and then follows it by heavy exercise. To avoid this, it is best if the diabetic eats something before performing the exercise in order to provide himself with the necessary sugar for the extra energy he would need.

The Use Of Insulin

Insulin is manufactured from the pancreatic glands of cattle, hogs and sheep. The first insulin had to be given several times a day to sustain the blood level of the patient. If he was given a large dose at one time, he would go into insulin shock. Later long-lasting insulin was developed which could be given once every 24 hours.

Here are a few facts about insulin, this lifesaving drug: There are three kinds of insulin—rapid acting, intermediate acting, and long acting—administered according to when they begin to act

and how long they act. There are also three strengths of each of these three kinds:

* U-40 (40 units of insulin in each cubic centimeter of liquid);
* U-80 (80 units of insulin in each cubic centimeter of liquid); and
* U-100 (100 units of insulin in each cubic centimeter of liquid).

The U-40 and U-80 strengths will soon be discontinued as studies show fewer errors are made in measuring the U-100 strength.

Insulin must be given by hypodermic needle and syringe which must be cared for so that they are clean and safe to use. (See list of available pamphlets on page 108). The injection sites must be



WHAT DO I DO NEXT?— A visitor to a diabetes screening program waits for the results at an outdoor clinic.



THIRD STEP—The blood sample is checked in a reflectance meter.

varied frequently from arms to thighs. Insulin must be taken at regular times and in specified amounts. It is not effective by mouth as it is destroyed in the upper digestive tract. It should be refrigerated except for the bottle that is in use and it should not be kept under conditions where there are extreme hot and cold temperatures.

There are several kinds of drugs which can be taken by mouth that will lower the blood sugar. Whereas insulin given by injection is a substitute for that which the body no longer manufactures, all but one of the oral drugs stimulate the insulin-producing glands in the pancreas to make and release more insulin. Juvenile diabetics and some adult diabetics do not respond well to these oral drugs and must take insulin by injections daily.

Information And Education

Everyone needs to know more about diabetes. First, professional information for physicians, nurses, nutritionists and lay people get a stimulus each year from the annual diabetes seminar



OLD METHOD—A drop of blood is drawn from a finger and placed on a Dextrostix (left). One of the traditional ways of detecting diabetes is to place the specimen against a color chart and compare the colors.

sponsored by the Florida Diabetes Association and the Division of Health, Department of Health and Rehabilitative Services, in cooperation with the University of Miami and the University of Florida Schools of Medicine.

Public education is carried on by local lay diabetes units of the Florida Diabetes Association and the Division of Health with its county health departments.

Patient education may be given the individual by his physician; or the diabetic may learn through attending classes sponsored by the local medical society, lay diabetes unit and county health department. In these organized classes, the diabetic patient is taught the general knowledge about diabetes; about diets, foods, calories, how to weigh and measure foods and food exchanges; the techniques of urine testing for sugar; various kinds of insulin and oral drugs; sterilization of injection equipment; general hygiene, dental care; and the care of the feet. This usually takes about a total of 10 hours. Not only patients, but their relatives who may be concerned with their diets and care are often invited to the classes.

The chronic diseases, of which diabetes is one, make health education more important because they can only be controlled through the action of informed individuals who have these conditions themselves. A physician, or nurse, cannot stand over a diabetic patient to make sure he eats the right diet and injects his insulin properly. It is up to the patient.



Some Problems With Diabetes

The diabetic is at special risk during surgery and it is especially important that the patient's regular doctor and his surgeon get together to keep his disease under control during this time.

Pregnancy may cause special stress to a diabetic mother and here again her physician will want to confer with her obstetrician and pediatrician.

Some patients refuse to acknowledge that they have the disease and cannot adjust to a "regulated life." These people need understanding and counseling. They are the ones who often have the worst complications of diabetes.

Other patients just do not understand about the disease and must be carefully taught. They must learn everything they can about how to successfully manage their lives.

Diseases of the teeth and gums are more common in diabetic patients. Those who wear dentures must be especially careful of pressure points. The dentist should be advised that the patient is a diabetic.

Diabetics are more susceptible to foot problems because of poor circulation in their feet and legs. They also have thin and

tender skin on their feet thereby being prone to more injuries. The patient must be advised on shoe fitting, trimming of nails, the type of socks to wear, and how to clean and dry the feet. The person who may be consulted about these matters is the family physician or a podiatrist (chiropodist) who is trained in the care of feet.

Role Of The Division Of Health

The Division of Health assists the county health department and other groups (medical societies, local lay diabetes units and civic groups) in planning and putting into operation mass screening programs for detecting diabetes by contributing the services of consultants—who train professional and lay persons and provide guidance at the screening sites—and limited financial assistance. Education of patients, the general public and physicians is another phase of the diabetes program which the Division of Health shares with the medical profession and lay diabetes societies.

There are some diabetic residents of Florida who need insulin and cannot afford to buy it. Many years ago, a bill was introduced in the State Legislature (by a member who was a diabetic) to appropriate funds for this purpose. In 1971-72, this amount was $100,000. About 5,000 medically indigent persons are now receiv-

Timely Topics

Timely Topics is a monthly bulletin published by the Division of Health for diabetics, relatives of diabetics or those interested in diabetes control. It includes reviews of recent research, review of literature, questions submitted by readers and answers, and favorite recipes of diabetics. If you are a diabetic or the relative of one, you may receive this free bulletin by writing to: **Timely Topics,** Division of Health, P. O. Box 210, Jacksonville, Florida 32201.

ing all or part of their insulin through the county health departments. The patient, by coming to the county health department, receives an added advantage since this allows physicians and public health nurses to check up on the diabetic, give him needed information and see that he keeps in contact with his physician—either a private physician or clinician in the health department.

Diabetes Associations And Societies

The Florida Medical Association has endorsed "screening programs" and urged its county medical societies to cooperate with the county health departments, Division of Health, and local lay diabetes units in this endeavor.

The American Diabetes Association is the national voluntary agency whose primary mission is to further education and service to the diabetic and promote research.

The Florida Diabetes Association is the state affiliate of the national organization and is composed of Florida physicians, nurses, nutritionists and laymen. Under the guidance and sponsorship of the Association, lay diabetes units have been formed. Presently in Florida, they are located at:

Societies	Headquarters
Brevard County	Merritt Island
Broward County	Ft. Lauderdale
Duval County	Jacksonville
Escambia County	Pensacola
Hillsborough County	Tampa
Indian River County	Vero Beach
Lee County	Ft. Myers
Leon County	Tallahassee
Manatee County	Bradenton
Greater Miami	Miami
Orange County	Orlando
Palm Beach County	West Palm Beach
Pinellas County	St. Petersburg
Polk County	Winter Haven

of the pharmaceutical (drug) firms which manufacture products for diabetics.

Florida's Camp For Children And Youth

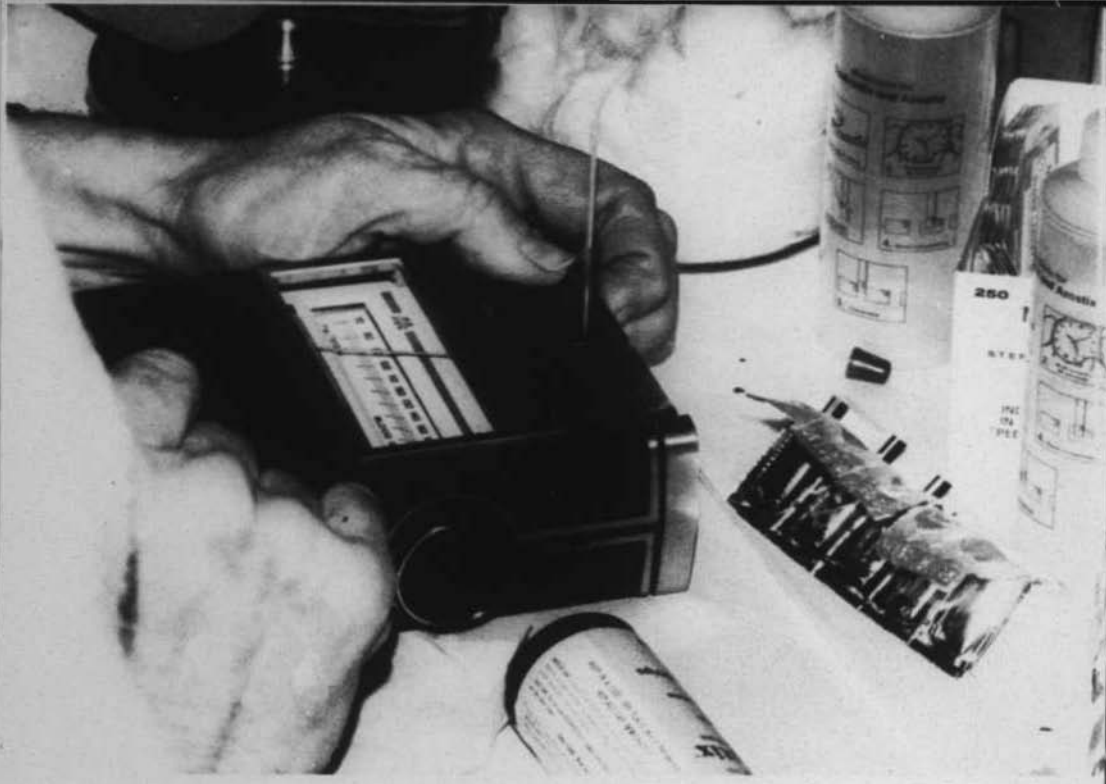
Florida is fortunate to have a summer camp for its children and youth who have diabetes. If your child is a diabetic and has not been able to have this summer fun, this may be the opportunity you have been looking for.

Camp McConnell, a summer camp for diabetic girls and boys, ages nine to 14, and youths ages 15 to 20, will be in operation from June 17 to July 12, 1973. It is being conducted by the Florida Camp for Children and Youth with Diabetes and is approved by the Florida Diabetes Association in cooperation with the Young Men's Christian Association of the Palm Beaches and the University of Florida's J. Hillis Miller Health Center.

Application blanks and information bulletins about the camp may be obtained by writing to the Camp for Diabetic Youth, 1910 Riverside Drive, East, Bradenton, Florida. The camp is on a lake 10 miles south of Gainesville, just off U. S. Highway 441. The cost is $175 for two weeks. There is a Campership Fund for those unable to pay. No child has ever been turned away because of financial reasons.

The medical staff consists of physicians, nurses and dietitians from the University of Florida's Health Center. The YMCA's regular staff mans the camp and it has had many years of experience with this type of activity.

The diabetic camp is a learning experience for the children. They are taught about diabetes and how to live with the condition and to better care for themselves in the years ahead. Sixty children attended the first camp in August 1963. All of these youngsters were taught to give themselves insulin, test their urines and weigh and measure their food. Many had never spent a night away from their parents before, and this, in itself, is a new and



NEW METHOD—The latest way of checking for diabetes is to place the Dextrostix into the reflectance meter which gives the test results on a dial.

Sarasota County	Sarasota
Volusia County	Daytona Beach

More lay diabetes units are being organized and persons interested should contact their county health departments or the lay society coordinator of the Florida Diabetes Association, 1910 Riverside Drive, East, Bradenton, Florida 33505.

A call to your county health department will put you in touch with the president of the local unit who will give you information about the hour and day of meetings.

A diabetic who belongs to one of these societies will learn about his condition. Comfort can be gained from meeting and talking with others who have the same problem, as well as listening to lectures by physicians, nurses, nutritionists, and representatives

of the pharmaceutical (drug) firms which manufacture products for diabetics.

Florida's Camp For Children And Youth

Florida is fortunate to have a summer camp for its children and youth who have diabetes. If your child is a diabetic and has not been able to have this summer fun, this may be the opportunity you have been looking for.

Camp McConnell, a summer camp for diabetic girls and boys, ages nine to 14, and youths ages 15 to 20, will be in operation from June 17 to July 12, 1973. It is being conducted by the Florida Camp for Children and Youth with Diabetes and is approved by the Florida Diabetes Association in cooperation with the Young Men's Christian Association of the Palm Beaches and the University of Florida's J. Hillis Miller Health Center.

Application blanks and information bulletins about the camp may be obtained by writing to the Camp for Diabetic Youth, 1910 Riverside Drive, East, Bradenton, Florida. The camp is on a lake 10 miles south of Gainesville, just off U. S. Highway 441. The cost is $175 for two weeks. There is a Campership Fund for those unable to pay. No child has ever been turned away because of financial reasons.

The medical staff consists of physicians, nurses and dietitians from the University of Florida's Health Center. The YMCA's regular staff mans the camp and it has had many years of experience with this type of activity.

The diabetic camp is a learning experience for the children. They are taught about diabetes and how to live with the condition and to better care for themselves in the years ahead. Sixty children attended the first camp in August 1963. All of these youngsters were taught to give themselves insulin, test their urines and weigh and measure their food. Many had never spent a night away from their parents before, and this, in itself, is a new and





CHECKING THE BLOOD—One of the campers at the Florida Camp has a sample of blood drawn by a camp physician. It is then tested by a technician in a temporary laboratory. This laboratory runs routine examinations on urine and blood specimens submitted by the campers.

---

desirable experience for the diabetic child. The children and youth enjoy typical camp activities such as swimming, horseback riding, cook-outs and hikes.

QUESTIONS AND ANSWERS ABOUT DIABETES

What is diabetes?

Diabetes is due to a deficiency of the pancreas, resulting in insufficient effective insulin to convert sugar into heat and energy for body use. When this sugar is not converted, it collects in the blood and may pass off through the urine.

Whom does it affect?

Anyone can have diabetes. However, persons developing the disease are usually over 40 years of age. More women have diabetes than men. There is a higher incidence among persons who are overweight, mothers who have borne large babies (over nine

pounds), and those persons who are relatives of diabetics.

Is diabetes hereditary?

YES. If one parent is a diabetic and the other is a diabetic carrier, seven of the 10 children of such a union will develop diabetes if they live long enough.

If a family history is positive, how can diabetes be prevented?

By genetic counseling and family planning. It is also believed that some cases of diabetes can be prevented if people do not become overweight. This prevention of obesity should begin as early as 20 years of age or sooner, if necessary.

If I am diabetic, what should I tell my children and grandchildren?

When they are old enough to understand, children and grandchildren should be told of a family history of diabetes. They should be advised that there is a strong possibility of inheriting the dis-

---

MANY ACTIVITIES—Swimming is just one of the many sports enjoyed at the camp for diabetic children and youth. Discussions on the control of diabetes are conducted daily for campers and professional and staff members.





ease, be familiar with the signs of the disease, and most important, the prevention of obesity must be stressed.

What kinds of diabetes are there?

There are several kinds, but only diabetes mellitus, also known as sugar diabetes, is discussed in this publication.

What are the usual symptoms of diabetes?

Unfortunately, early diabetes may present no symptoms. Late symptoms may be fatigue, weight loss in spite of a ravenous appetite, increased thirst, frequent urination, skin infections, such as boils and pimples, and oftentimes itching skin. Diabetic coma, as well as kidney and nerve involvement, are serious complications and must be handled as medical emergencies.

How can diabetes be detected?

Simple screening tests (blood sugar examination) will lead to diabetes detection. A blood sugar estimation taken two hours after a measured carbohydrate meal is the most reliable method of choice.

Who can perform these detection examinations?

Blood sugar examinations can be carried out by your physician, county health department, or in a medical society approved, medically supervised diabetes detection clinic. Diabetic screening programs are usually co-sponsored by the local units of the Florida Diabetes Association, by most county health departments, and local service clubs.

How often should one be tested?

Once each year after the age of 35. Your physician can advise you if you are the relative of a diabetic, are overweight, or have symptoms suggesting diabetes.

If elevated blood sugar is found—What then?

Other diagnostic tests and studies may be necessary. Your physician can best advise you on the subject of diagnosis and treatment. YOU MUST FOLLOW HIS ADVICE CAREFULLY. **Most authorities agree that when diabetes is discovered in its early stages and adequately treated, many of the complications can be prevented or postponed.**

What types of treatment are there?

The usual treatment of diabetes consists of diet, exercise, insulin or oral drugs which lower the blood sugar or stimulate the pancreas to increase the insulin output. These measures may be used alone or in combination and in strict accordance with your physician's instructions. Other types of treatment are directed toward building up the general health and care of the feet.

Who is interested in detection programs for diabetes?

The Division of Health, the director of your county health department, your physician, the Florida Medical Association, the Florida Diabetes Association and its local units, and other state and county agencies interested in good health.

What books or literature are recommended?



Write to the Division of Health for Reading for Diabetics, which is FREE upon request.

Please remember that—

Diabetes must be detected before it can be treated.
Untreated diabetes will surely lead to complications.
Diabetes cannot be cured, but it can be controlled.

So, make an appointment with your physician for a physical examination tc insure better health.

PAMPHLETS

Following is a list of pamphlets which are available from your county health department in limited quantities:

Are You Related to a Diabetic?

Diabetic's Identification Cards

Recommended Readings for the Diabetic

Sunshine Meals, Using Your Food Plan for Diabetics

What Everyone Should Know about Diabetes and its Early Detection

When Your Doctor Says You Should Test Your Urine

When Your Doctor Says You Need Insulin

AUDIO-VISUAL AIDS

Following is a list of 16mm films, 35mm slides and film strips which may be borrowed from the Division of Health, Audio-Visual Library, Box 210, Jacksonville, Florida 32201, by any responsible group:



THEN GOOD NEWS—(far left)—A young woman is assisted in filling out the questionnaire prior to taking the diabetes test. Then she reacts with smiles to the good news that she does not have diabetes. Unfortunately not all Floridians are so fortunate. Those who are suspected of having the disease are referred to physicians for diagnosis and follow-up.

TEXT MAY BE LOST DUE TO TIGHT BINDING

Child with Diabetes—35mm slides with script on treatment, prognosis, stages, signs and symptoms.

Diabetes and You, Too—The story of a young girl as she is examined, diagnosed, treated and taught about diabetes. (21 minutes)

Diabetics Unknown—Shows the cause, signs, symptoms, detection and treatment of diabetes. (29 minutes)

Foot Care for Diabetics—Foot care techniques demonstrated and discussed. (5 minutes)

What You Don't Know Can Hurt You—General information about diagnosis and treatment of diabetes, how diabetes runs in families and being alert for symptoms. (27 minutes)

How Sure Are You?—Stresses the fact that diabetics, in all types of endeavor, can lead a normal life if proper care and attention is given to diet, use of drugs and other healthful measures. (15 minutes)

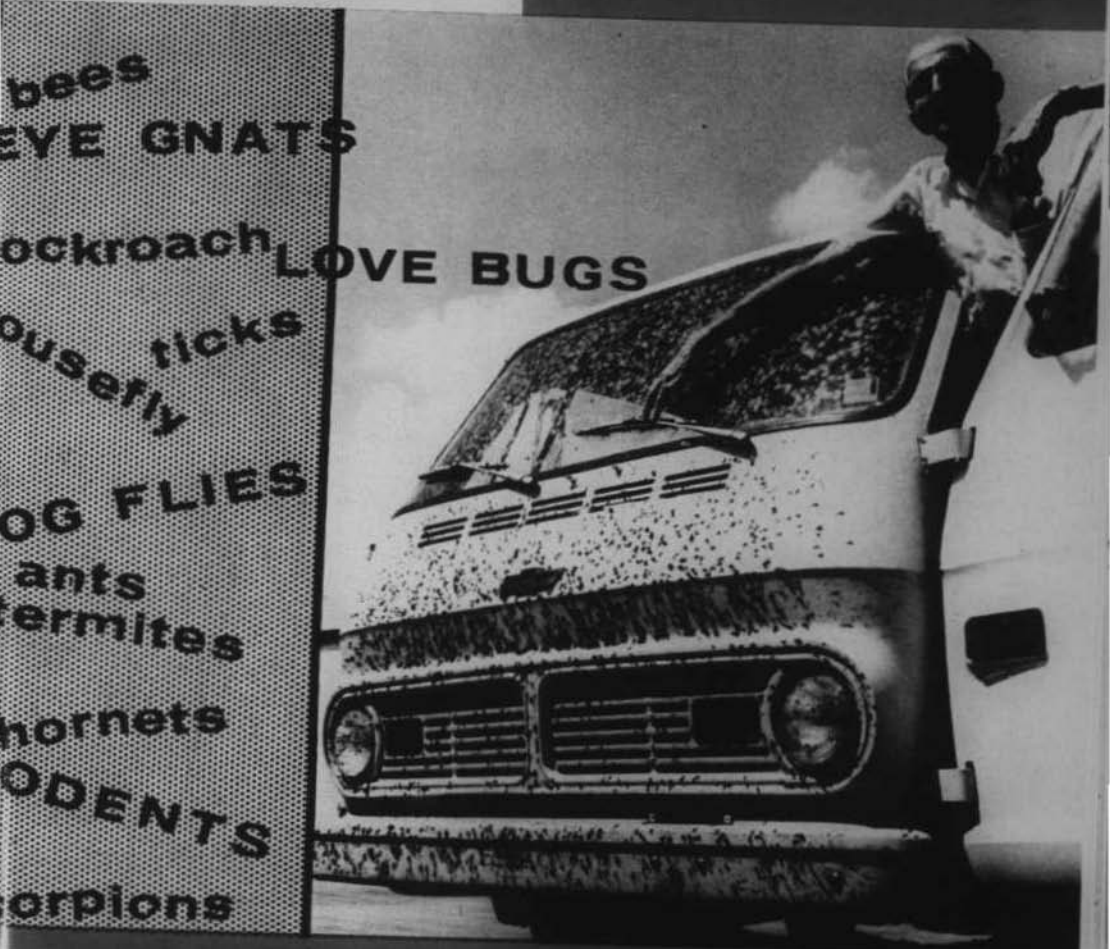
Just One in a Crowd—Set of six film strips on diabetes, diabetic diets, hygiene, exercise and foot care. Each strip has a record (each strip 15 minutes)

Self Administration of Insulin—Techniques for responsible diabetics. (6 minutes)

Stable Diabetic

All through this issue of **Florida Health Notes,** we have been talking about a **stable** diabetic. What does this mean? It means a diabetic who has achieved a balance between the amount of exercise he takes or the work he does, the amount of food he eats (calories) and the amount of drugs (insulin or pills) that he takes daily. These factors balance each other so that the diabetic is able to live a normal life. A diabetic is the "captain of his ship" and how he lives determines how smooth or rough the sailing through life will be, by the way he sticks to his diet.

FLORIDA HEALTH NOTES



VOLUME 65 — NO. 5
MAY 1973

PESTS ---
That Annoy Us

FLORIDA STATE LIBRARY

Bees - Scorpions - Hornets - Termites - Spiders - Wasps - Yellow Jackets



SPATTERED BUGS (Cover photo)—A truck driver displays the mess love bugs made on his vehicle. This issue of Florida Health Notes also discusses other pests that annoy us.

CONTROLLING DOG FLIES (above) — Workmen remove eel grass from the shores of a West Florida lake. The dog fly, which resembles the housefly (insert), breeds in this type of material.

Love Bugs - Dog Flies - Eye Gnats - Rats

PESTS --- That Annoy Us

FLORIDA, the land of sunshine, vacation, opportunity and many natural and man-made attractions, is the home of some 7.2 million permanent residents and the vacationland of some 23 million annual visitors. It is also a land bothered by pests. Due to the near sub-tropical climate and lush vegetation, Florida's pests have extended periods and places in which to breed. Some pests, such as rodents and cockroaches, are active the year around.

Each May and September, as you drive along Florida highways, millions of flying insects called "love bugs" may spatter your car.

The beaches of Northwest Florida are pleasant during the summer, but in late summer and autumn hordes of blood-sucking dog flies may drive swimmers and sunbathers from the strands.

People in rural communities are plagued by millions of eye gnats that rise from newly cultivated fields.

Rats and mice are a constant menace where man's indifference and carelessness provide shelter and food for these pests.

In addition, there are a number of disease-carrying and nuisance pests that are problems in the Florida home. These include flies, cockroaches, fleas, hornets, yellow jackets, bees and other stinging pests, ticks and termites.

The Division of Health of the Department of Health and Rehabilitative Services is concerned about these pests that carry disease and annoy us. To combat the insects and rodents, the state health agency is asking the Florida Legislature for funds to set up or expand programs to make your life more comfortable.

One example of the success the Division of Health has had in the controlling of pests is the lowering of concentrations of salt marsh mosquitoes and other species in many areas of the state. This made the growth of the tourist industry possible and many coastal areas inhabitable—especally along the Gold Coast.

Ants - Cockroaches - Houseflies

This issue of **Florida Health Notes** will tell you about these pests, how they breed, how they annoy Floridians and visitors, and what the Division of Health is doing to combat them.

THE LOVE BUGS

TWICE each year, in May and September, motorists in Florida are plagued by millions of insects that swarm around their cars and adhere to the headlights, windshields, grills and radiators, blocking the vision of drivers and clogging automobile cooling systems.

Service stations, car wash facilities, and interstate highway rest stops know when the love bug seasons occur because they are swamped with motorists who want their windshields and radiators cleaned.

Although these bugs are harmless, do not carry disease, and do not bite, they create a nuisance. Twice each year, letters pour into the Governor's Office and other state agencies complaining about these pests.

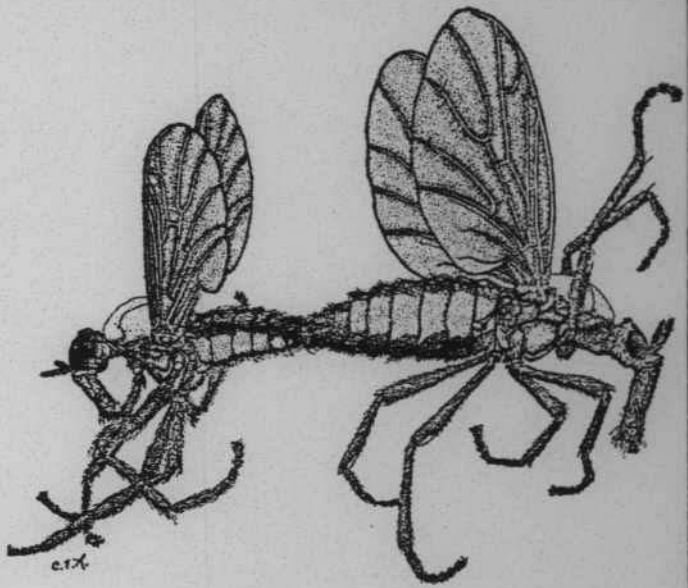
These bugs are also known as March flies, or "honeymoon flies," telephone bugs, double-headed bugs, or united bugs, because they are most often seen after emergence flying in copulation.

These flies, black marked with red, belong to the family Bibionidae—the March flies; the nuisance species in Florida is **Plecia nearctica.** The species occurs in all of the states bordering the Gulf of Mexico and extends south into Mexico and Central America.

FLORIDA HEALTH NOTES

Published monthly by the Division of Health (Wilson T. Sowder, M.D., M.P.H., Director) of the Florida Department of Health and Rehabilitative Services. Publication office, Box 210, Jacksonville, Florida 32201. Second Class Postage paid at Jacksonville, Florida. Printed since 1892, this publication is for individuals and institutions with an interest in the state's health program. Permission is given to quote any story providing credit is given to the Division of Health. Editor: Robert A. Schoonover, M.A.
Post Office Form 3579 should be mailed to Box 210, Jacksonville, Fla. 32201

VOLUME 65, NO. 5 **MAY, 1973**



LOVE BUGS MATING —Love bugs pose more problems when they are joined in copulation. The female (right), the stronger of the two, controls the flight of the pair.

They have apparently existed in small numbers in Florida for a number of years, but during the past six or seven years there has been a real "population explosion." No satisfactory explanation has been found for the increased population.

In some places in the South, the flies breed and the larvae develop in the grass clippings along the highways. Since Florida's well-drained soils do not provide consistent moisture, the eggs are laid in oak hammocks and other low areas where the soil stays moist. The larvae feed on leaves, fallen Spanish moss and decaying vegetation. They perform at least one useful function by converting this material into soil components. On Payne's Prairie, an old lake bottom near Gainesville, extensive larval development occurs under old cattle droppings. Conditions needed for larval development are adequate moisture, partially decayed vegetation, and favorable temperatures. The larvae and pupae apparently are not subject to parasites or predators, but are subject to drying out (dehydration).

Flights of the adult flies extend over a period of about four weeks each in May and September. Individual flies do not live this long, but are constantly being replaced by other individuals of the same generation. As the flies emerge from the pupal stage, they mate and fly in copulation—usually until the male dies. The larger and stronger female controls walking and flight of the joined pair. The males live two or three days; females may live a

week or longer and mate with more than one male. Flights occur only during the day; the mating pair rests at night on low-growing vegetation. Adults feed on blossoms' pollen and nectar. Favored food source of adults are blackberry and clover blossoms in May and goldenrod and other blossoms in September.

Controlling Love Bugs

There is at the present time no practical way to control the insects. The infestation of love bugs occurs over such a wide area that any chemical controls are considered impractical. Because the flies sit out the hours of darkness, travel is easier at night during the love bug season. The higher the speed, the more love bugs will be spattered on your car. Therefore, a reduced highway speed will help reduce the nuisance.

A suitable-sized piece of window screen behind the grills and in front of the radiator will prevent clogging of the cooling fins

PROTECTION AGAINST LOVE BUGS—A screen attached to the grill of a car will keep the pests from clogging the motor and cooling fins.



and overheating of the engine. The car should be cleaned of the spattered remains (mostly scrambled eggs) as soon as possible to avoid damage to automotive paints. Several minutes of soaking with plenty of water will make the remains much easier to remove —but some rubbing will be necessary. A strip of thin kitchen plastic, such as Saran wrap, may be put over the damp windshield and smoothed on. This can be easily stripped off and replaced when it becomes covered with splattered insects.

The painting of building exteriors should be avoided in May or September when adult love bugs are in flight. Merchants complain that the pest is becoming so bad that it is impossible to keep store windows clean and the bugs swarm into the buildings when the doors are opened.

Request for Funds

Love bugs have been a growing problem in Florida for the past few years and the Division of Health of the Department of Health and Rehabilitative Services is trying to do something about them before they become a more serious problem. The state health agency has asked the State Legislature for $200,000 for the coming fiscal year to study the pest.

This money will be used to carry on basic research at the Division of Health's Entomological Research Center at Vero Beach, and applied research in the control of love bugs at the West Florida Arthropod Research Laboratory at Panama City. In addition, studies will be made to see if control operations can be carried out by mosquito control districts and county health departments in areas adjacent to interstate highways.

THE EYE GNATS

IS there anything more of a nuisance than an eye gnat? The pest is one that breeds where wooded areas and fields have been cleared for housing projects, subdivisions, or placed under intense cultivation. The problem has increased particularly in West Florida where large tracts of wooded lands have been cleared for farming projects. Small towns in the surrounding areas have been plagued by swarms of eye gnats that do not

bite, but swarm around the head trying to enter the mouth, eyes, nose—attracted by the secretion of the glands.

The insect is known to spread "pink eye" (acute epidemic conjunctivitis). This non-fatal infection of the membrane lining of the eyelid may last two or three weeks. The patient with pink eye should be taken to a physician, regardless of the extent of the infection. Children under five years of age are the most often affected and the rate of incidence decreases in older children.

The eye gnat is only a minor health problem; it is primarily a nuisance and economic problem. The pests are prevalent during the year, but the peak population occurs during the mid-summer months of July and August. The pest also transmits pink eye in cattle. A farmer with a herd of purebred, expensive cattle faces economic ruin should they contact the infection from eye gnats.

In the past three years, eye gnats **(Hippelates pusio)** have become serious pests in several areas of Northwest Florida. The problem had become very serious by 1970 and the Division of Health's West Florida Arthropod Research Laboratory was requested to initiate studies of this problem.

In 1971, studies were made to determine the effectiveness of a formula of pesticide in soybean oil applied as an aerial spray against a natural population of eye gnats. There was a 48 per cent



TRAPS FOR EYE GNATS—Because eye gnats breed in the soil of newly cleared lands, emergence traps are placed on the ground to catch emerging adults.

reduction of eye gnats within two and one-half hours after the spraying; but this was considered to be an unsatisfactory level of control.

Studies of the pests continued in 1972 with two million adult eye gnats trapped in nine attractant traps placed on a farming project in Bay County. The highest count for one trap during a 24-hour period was more than 41,000 gnats.

Forty-five traps were placed on the ground to monitor the production and emergence of adult gnats under different conditions. Results indicated that the same number of gnats were produced on irrigated fields located on sandy ridges as on lower areas where the soil had a higher moisture content.

The Division of Health has asked the State Legislature for $25,000 to step up the study of eye gnats. This money will be used to hire sub-professional employees to assist the entomologist already on the staff of the West Florida Arthropod Research Laboratory. This entomologist is experienced in the field of study that will develop methods of controlling the pests.

DOG FLIES

THE dog fly, a blood-sucking insect also known as the stable fly is not generally considered a pest to man in its normal environment; but in certain geographic areas of the United States where it breeds in large concentrations, the dog fly causes havoc to man and livestock. One of these is the area in West Florida which runs from St. Marks River in Wakulla County to the Perdido River in Escambia County. Although the dog fly breeds the year around, the peak season starts in late August and runs through September and October. By early November, the first frosts slow the breeding, and the marine grasses of the bays, in which the flies breed, have stopped growing.

However, late August and September is also the period when the businessmen of the Panhandle wish to extend their tourist season and to do this, they promote outdoor activities, such as

fishing tournaments. A sudden swarm of blood-sucking dog flies on the beaches and in the towns can wreck Labor Day weekend business and ruin many a tourist holiday.

Life History of the Dog Fly

Dog flies are blood-sucking pests. When they swarm in millions along the beaches looking for food in the form of blood, the most natural victims are the sunbathers, swimmers and boaters. When a person is suddenly attacked by a hundred buzzing, biting insects, he is not going to stay around. Tourists pack their bags and leave.

In the woodlands away from the beaches where the flies normally live, they are not in heavy concentrations. However, they fly with the wind and when a northerly wind blows toward the beaches from the land, the flies take off and land on the shoreline. Here they take shelter on the leeward side of the dunes. Some move off-shore to boats where they continue to bite. They do not normally concentrate in residential areas, but occasionally they may bite a human or dog while en route to the beaches.

The dog fly is quite similar in appearance to the common housefly. However, both the male and female of the dog fly are blood-sucking insects. They apparently need the blood for food; the female also needs it to develop her eggs.

The female lays her eggs in the damp grassy material deposited by waves high on the bay shores. If the grass has been on the shore for more than three weeks, the female does not consider it suitable for breeding.

From the egg, the dog fly emerges as a larvae. It then goes into the pupal stage before emerging as an adult. Development from egg to adult fly in summer takes only 12 to 16 days. After it emerges, the fly's wings are wet and crumpled and it must crawl around on the ground or marine grass for a half hour or so until its wings are dry. It then takes off looking for a blood meal.



BREEDING MATERIALS—Fermenting marine grass, washed ashore on the bays and lakes of Northwest Florida, is a major breeding source of the blood-sucking dog fly.

The dog fly is active only during daylight hours and rests on trees and shrubs during the night. It has been observed sipping nectar from a species of goldenrod that grows on the dunes of West Florida.

A female can lay hundreds of eggs during her lifetime. During the summer months, the adult dog fly lives only about three weeks, but during the cooler months, the life cycle of the fly is extended up to two or three months.

From Where Do They Come?

The dog fly normally breeds around farms, dairies, chicken ranches—anywhere there is livestock. It has been found breeding in the animal exhibits of the beach communities. Investigators estimated that one modern chicken farm, where chickens were kept in cages, had over 489,000 dog fly larvae in the piles of chicken manure.

In West Florida, the dog flies breed principally in the fermenting marine grasses that have been broken off the bottom of the shallow bays by storm waves, shrimp trawlers, and propellers of boats and washed ashore. If conditions are right, the larvae may

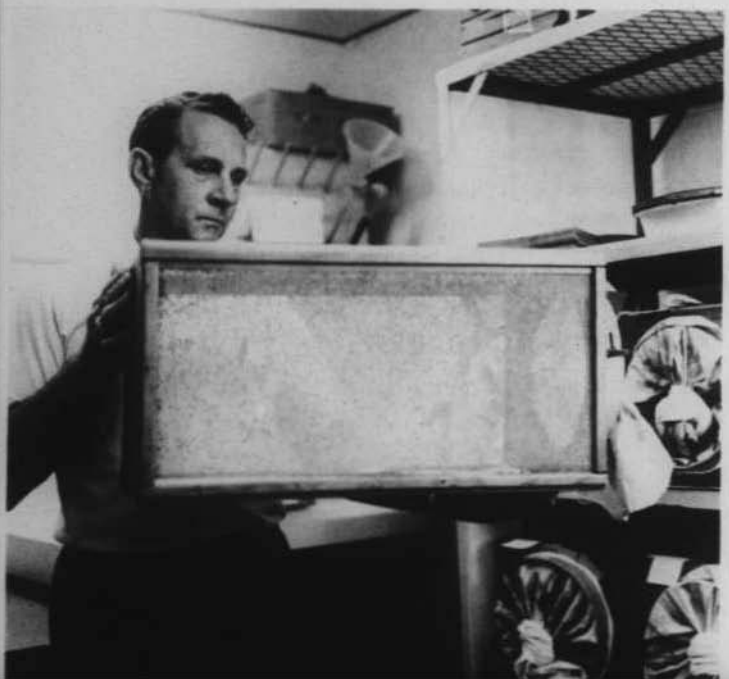
push themselves into the sandy soil beneath the piles of marine grass and here they go through the pupal stage and emerge as adults.

There are some 1,100 miles of bay shorelines between St. Marks and the Perdido Rivers and the area affected by dog flies is about 6,000 square miles. Much of the area has the potential for breeding the pests. In addition, they breed in eel grass that washes upon the shores of fresh water lakes and canals in Bay and Gulf Counties.

Research in Dog Fly Control

The State Legislature, in 1963, gave funds to the State Board of Health (now Division of Health) for the construction of a laboratory in West Florida to study the dog fly problem. Matching funds were secured from the U. S. Public Health Service and the West Florida Arthropod Research Laboratory was built.

The earliest research by the state laboratory was designed to begin to give relief from the ravages of adult flies at the earliest possible time. The use of insecticides was the only practical method of accomplishing this and tests were initiated as early as 1964 to provide local control programs with information for effective insecticidal control.



RAISING PEST FOR RESEARCH—The Division of Health's West Florida Arthropod Research Laboratory breeds dog flies to mark and release. Thus their flights can be measured. Some of the dyed dog flies have flown 70 miles from the place where they were released.

To help carry out its research, the Laboratory raises cages of dog flies in its insectary. Here the adult flies are fed an animal blood formula and they lay their eggs on damp pads underneath the cages. These eggs hatch and the flies are raised to adult stages. To study the flight ranges of dog flies, some are dyed and released at dawn—when the winds are blowing from the land toward the beaches. Some of the dyed flies have been trapped 70 miles from the site where they were released, indicating that the dog fly ranges far from its birthplace. This gives weight to the suspicion that a vast number of breeding sites—previously suspected but not proven to be sources of flies affecting the Gulf beaches—may exist in southern Alabama.

Controlling the Dog Fly

The adult dog fly, once it has emerged from the pupal stage, and its wings have hardened, is hard to control. One of the best places to control it is at the breeding sites.

Removing the breeding material is one way to control breeding. In some places workers can scatter the marine grass so it will dry out or it may be buried. Problems have risen when homeowners along the bay and lakes rake the grass into piles, thinking they are helping control the flies. But this just leaves huge piles in which the dog flies can lay their eggs.

DDT was once widely used as a spray for dog fly control, but it has been replaced because of complaints that it contaminated the environment. Now the mosquito control districts spray the marine grass with methoxychlor—a residual spray—that does not last so long in the environment as DDT.

Methoxychlor is effective for several weeks. Since dog flies will only breed in grass deposits that are less than three weeks old, the breeding sites need to be sprayed only once with the chemical. In order to mark new grass deposits and prevent re-spraying of old deposits, the Laboratory has devised a method by which dye is added to the formula and the local mosquito control districts' supervisors can tell which grass deposits have been sprayed.

Control of adult flies is guided by results of daily inspection in areas to be protected. Inspection "stations" are established at two or three mile intervals along the beaches and visited daily by inspectors during the dog fly season. Telephone complaints by citizens to local mosquito control districts are another source of information that dog flies are biting. When the inspector determines the dog fly population needs immediate attention, fogging trucks are sent out—weather permitting—to areas where there are large numbers of flies. While daytime fogging can be used for dog fly control, it is not used for controlling mosquitoes which are active at dusk and dawn.

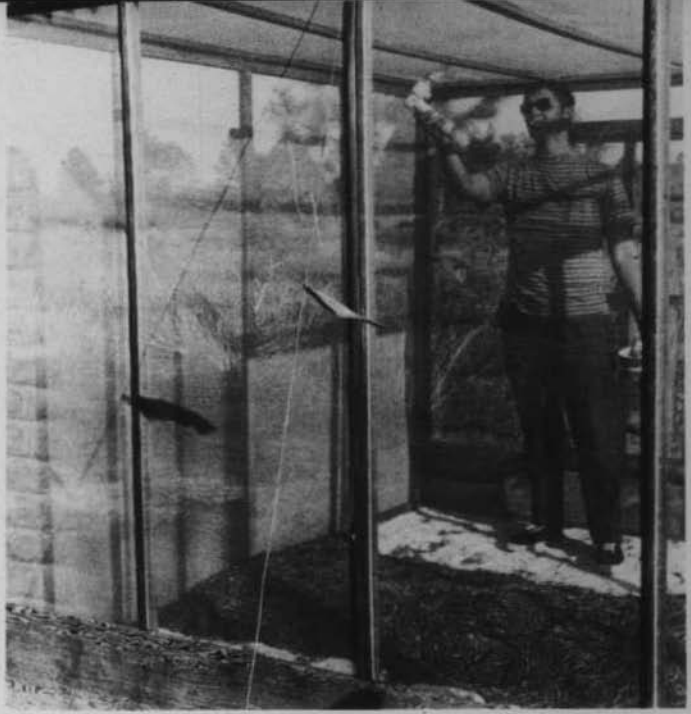
The Division of Health has asked the State Legislature for an increase of $18,189 above its current $75,000 for dog fly research to build an additional building at the Laboratory and storage facilities for its supplies and equipment. This request will aid in the work of dog fly research and control.

RODENT CONTROL

WHILE Florida, unlike Hamelin Town of fiction, is not overrun by rodents, it is plagued by these pests in many large urban areas. Rodents include such native animals as squirrels, woodchucks, field and wood mice, pack rats, gophers, porcupines, and beavers. Many of the native Northern American rodents are considered of economic importance to man—some for their pelts; others because of damage to crops, stored foods and other material.

But in this account, we are concerned with the domestic rodents —the Norway rat, the roof rat, and house mouse. They are more properly called murine rodents. These rodents, imported a long time ago, are far more destructive than the native ones. They are the most numerous, adaptable, hardy and prolific of God's creatures—and the most despised and unwanted.

Rodents will work as hard as necessary to obtain food. When driven by hunger, nesting urges or lack of shelter, they will try astonishing feats. To get food, they will gnaw through wood, paper



TRAPPED FLIES—As dog flies emerge from breeding materials, they are trapped in these emergence cages. This is one way of studying how many larvae emerge as adults.

board, cloth sacks, lead pipes, cinder blocks, asbestos and aluminum. They have pierced concrete used for ratproofing before it had had time to harden and even gnawed through sun-dried adobe.

Rats will destroy food, gardens, crops; start fires, and damage books and buildings—among other things.

Rodents, when they feed on mixed garbage, prefer grain and grain products (oats and corn), fish, apples, cooked eggs and potatoes. They have little desire for raw beets, peaches, onions, celery, cauliflower and green peppers and have an aversion to highly spiced foods. They are carnivorous and when no other foods are available, they have been known to eat their young or each other. In Florida, roof rats are considered serious pests in citrus groves, although citrus fruit is not usually a preferred food of these pests. They probably feed on citrus here because there is little other choice of food.

Diseases Carried by Rodents

Man's indifference and carelessness in handling food stuff and refuse has fostered populations of rats and mice in close proximity to his home and work. Therefore they are called "domestic"



RODENTS' HOMES — Rats can easily find shelter in this trash-covered empty lot located in a large Florida city. All the rodents need is food from their human neighbors to make life ideal.

rodents. As a result of this close relationship, man suffers from rat bites and such rodent-borne diseases as:

* murine typhus fever—transmitted from the rat to man by the rat flea;

* the Plague—a disease that once killed millions of humans in Europe and is found in a wildlife reservoir in Western United States. It is transmitted by fleas from rodent to rodent and to man;

* leptospirosis—an infection in man resulting from contact, either directly or indirectly with urine of infected rodents.

* rat-bite fever—caused by bacteria found on the teeth and gums of rats and transferred by the bite of a rat;

* salmonellosis—a common disease that is spread by foods contaminated with rat feces containing the bacteria;

* rickettsialpox—an infection resembling chickenpox transmitted from house mice to men by the bite of a certain mite harbored by the mouse;

* Tamiami virus—found in cotton rats in the Everglades and the Tampa area; it is responsible for severe hemorrhagic fever in humans.

* trichinosis—a disease found in swine, cats, bears and rats. Man may acquire the disease by eating improperly cooked or cured pork. Rats aid in spreading the disease among pigs.

Signs Left by Rodents

Food, water and a place to hide and raise their young are the necessary requirements for rodents. The most positive proof that rodents are inhabiting an area is to see a live rat or mouse. However, these pests are nocturnal and secretive in their habits; live animals are seldom seen. Only when there is a very heavy population do rats and mice show themselves when humans are present.

Even if you are not an expert in rodent control, there are signs by which you can determine if rats and mice are present. Various sounds, especially when the area is quiet, may give clues to rodents' presence and location. All rodents leave a quantity of droppings and this is a key to species and number of pests. Since Norway and roof rats seldom occupy the same area, several sizes of droppings may indicate different age groups, that reproduction is going on, and an extensive infestation exists.

Rats and mice generally occupy only a limited area. They use the same pathways many times. The location of these runways reflects the rodents' habits. Most often, these runways are found along walls, pipes and rafters, under boards, behind objects and accumulated litter. Outdoor runways may appear as clean-swept and even a wavy line of a dragged tail may show. Rub marks may appear on buildings, around gnawed holes, along pipes, and on the edges of stairs, beams and shelves where natural oils and dirt have rubbed off the rodents' bodies.

Gnawed bones, food wrappers, seed hulls and other debris may accumulate around rodents' feeding stations or entrance to holes. The freshness of the food scraps may indicate how long the activity has been occurring.

Controlling the Rodents

Rats and mice will stay where they can find the three essentials of life—food, water and shelter. Controlling the rodents requires the elimination of these; in addition, it may require poison bait, traps and poisonous gases and tracking powder.

Good housekeeping is the most important, indeed, the only indispensable defense against rodents. Without good housekeeping and food sanitation as part of the domestic rodent elimination program, control and prevention are virtually impossible. Good premise sanitation is important in preventing or staving off an infestation and provides the final blow to any existing infestation.

The areas where rodents are more prevalent include:

* waterfront and downtown areas which are deserted at night and where water and food scraps from restaurants are available;

* industrial areas where workers eat their lunches and leave scraps of food around and where there are piles of material for hiding places;

* beaches and picnic areas where people leave food and where breakwaters or other buildings provide shelter;

* refuse dumps that are not properly managed provide shelter, food and water for rodents, flies and mosquitoes; and

* lower socioeconomic neighborhoods where substandard housing, carelessness and indifference are usually basic reasons for leaving piles of trash—which shelter rodents, and improperly stored garbage—which supplies food.

Rats can be "built out" of buildings. Vents and windows can be screened with one-quarter inch hardware cloth to keep out rats and mice. Metal cuffs and plates can be placed on wooden doors and door posts at side or back entrances to buildings to prevent rats from gnawing under or around doors. Openings around pipes or conduits, which rats may use as entranceways to buildings, can be filled with concrete, hot-poured coal tar pitch, or closed with metal guards and steel wool.

One of the most common ways of ridding a premise of rodents is by chemically impregnated food baits. Red squill, zinc phosphide, barium carbonate, ANTU, and the arsenicals are chemicals that have been used for many years. More recent rodenticides include the anti-coagulant which kill by internal bleeding. These include Fumarin, Pival (pivalyn) and Warfarin. Rats will not eat poisoned baits if there is other food around. The anti-coagulant must be digested by the rats in small amounts for three or four

days before the poison becomes effective. Rats will avoid strange foods or take only token amounts. The best method is to put out non-poisoned foods for several days and then add the poison.

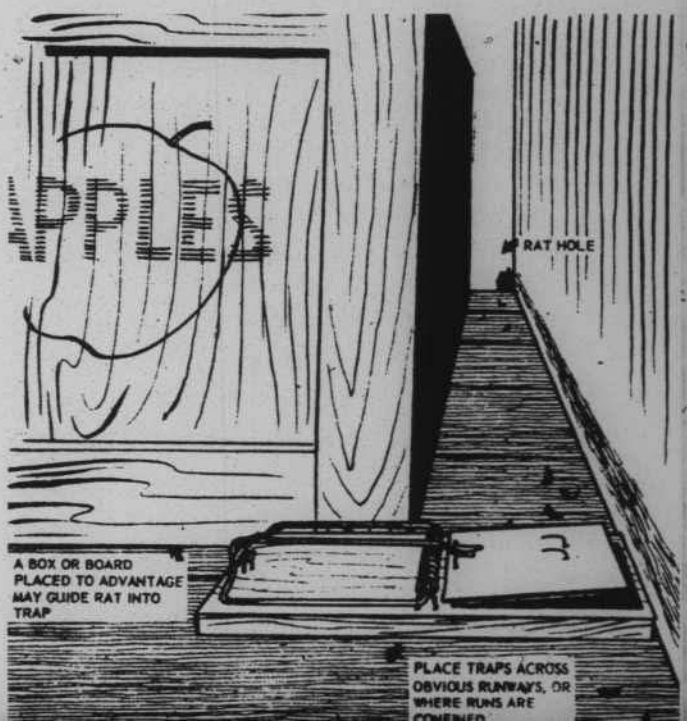
Traps can be used to eliminate rats where poison baits would be dangerous or undesirable, to avoid dead rat odors, to eliminate bait-shy rats, or to catch live rats.

Funds for Rodent Control Programs

The Division of Health is asking the State Legislature for $135,000 to stimulate rodent control programs in lower socioeconomic sections of large urban areas. The funds will be granted to those county health departments which put up equal matching funds to carry out rodent control programs in blighted neighborhoods. These programs will include premise sanitation, destroying of harborage areas of rats, and elimination of their food and water supplies.

PESTS IN THE HOUSEHOLD

SOME of the pests that make our lives uncomfortable are household pests that infest cupboards, our foods, our bathrooms, the very walls of our houses. There is no question that many insects are health problems in Florida; but in our homes they are even more of a problem.



TRAPPING RATS — One way of trapping rodents is to place a trap in their runways.

Most insects start from eggs laid by the female; eggs vary greatly in shape, size, color and place of deposit. Some species may lay only three or four eggs; others lay hundreds or thousands. Some insects, such as grasshoppers and chinch bugs, emerge as small miniatures of the adult. Others go from the egg into a larval or nymphal stage. After several molts, they assume a resting stage, the pupa, and then emerge as an adult ready to lay eggs. It is as nymphs and larvae that the insects grow and this is when many insects are the most destructive. Some arthropods, such as mosquitoes, flies and fleas transmit human diseases as adults.

Insecticides That Kill

Household pests do not annoy us intentionally. They are merely looking for food and shelter. If they do not find them, the insects die or leave the area. But food to some insects means paper, wood, cloth, mucilage, fur, hair, lint and many other things. **Cleanliness** is the first line of defense against household pests but it is not the only answer.



USE OF INSECTICIDES —Care should be taken in the use of insecticides. If you have a serious pest problem, the best plan is to call in a commercial pest control operator.

Insecticides are applied by:

* space sprays—chemicals used in a "bomb" or spray gun under pressure for a quick kill of flying insects and little residual action.

* residual sprays—chemicals sprayed on walls and other surfaces leaving a film and seeping into cracks to leave a poisonous chemical that kills on contact and is effective for weeks;

* powder or dust—chemicals spread or blown into hiding places and kill on contact.

Chemicals must be used with common sense and care. Protection should be used to prevent inhalation of the dust, powder or spray. Hands should be washed thoroughly after using any insecticide. If you have a serious pest problem, the best plan is to call in a commercial pest control operator who is licensed by the Division of Health.

Ants and Termites

Many times people cannot tell ants from termites. It is important not to confuse flying ants and termites because control measures are different. The ants have a very narrow waist, bent feelers and at times, two long wings and two short wings. The termite has a much thicker waist, straight feelers and four wings of equal length. Neither ants nor termites carry disease but ants contaminate food and the termites damage buildings.

Ants will eat most foods that man eats and for this reason will invade his home. Most species live in outside nests. Control measures include the elimination of all sources of foods for the ants and destroying the nest if at all possible. Poison dust may be blown into cracks around baseboards and other places where ants make their trails. The ants will carry this dust back to their nests. If a stomach poison is mixed with attractive bait the ants will carry it back to the entire colony. The nest can also be destroyed with boiling water, water-based insecticides or kerosene.

There are two types of termites in Florida—the subterranean and drywood. The subterranean lives in the soil because dampness is necessary for its existence. It builds a tunnel from the ground up a foundation or post to the wood. The drywood termite lives



THE BUSY ANT—This insect will eat man's food and thus contaminate it. Control measures should include the elimination of the ants' nest.

in the wood and never has contact with the soil. Both types feed on common lumber used in buildings.

No building is completely safe from termites. Treated wood and pretreated soil are not adequate protection for a building. Treatment with chemicals and periodical inspections are the only control.

Serious termite damage may not be discovered until the damage is far advanced. Nails will drive in too easily; siding will fall off; shingles will pull loose. It is recommended that the average homeowner, who usually lacks equipment and experience, call in a pest control operator. Most reputable termite control operators will make inspections of buildings without charge.

German and American Cockroaches

Cockroaches are the most disgusting insect pests with which Floridians have to deal. They live on filth and carry organisms which spread diarrhea, Salmonella, food poisoning, dysentery and other diseases. Because of their relatively large size, they are capable of doing much damage to food and furnishings. They eat any sort of food, filth, paper, leather, mucilage, starch. They give

off a foul odor that cannot be mistaken for anything else. The primary step to control cockroaches is to eliminate all possible sources of food and to clean out or reduce areas of breeding. Tight-fitting doors and screens should be maintained. It is recommended that a residual spray or dust be applied under sinks, stoves, refrigerators and in other hiding places as a preventive measure—even-though the home may be apparently free of the pest at the moment.

Roaches vary in size from one-half inch to over two inches in length. The German species is light brown and the American species is almost black. Some adults have wings that are almost invisible when folded over the back. All seek concealment during the day and are active at night.

Houseflies

The housefly is one of the most common and annoying pests. It presents many problems to the household. Flies feed on human and household foodstuff and wastes, livestock feed, garbage dumps, and any form of decaying vegetable or other organic matter. For breeding, they need an undisturbed source of rotting material and here lies the clue to their control.

Fly control involves the removal of all breeding places and the elimination or covering of all sources of food, such as home gar-



GERMAN COCKROACH—This pest is one of the worst in Florida. It carries a number of diseases and, because of it's large size, causes considerable damage.



THE HOUSEFLY—This is one of the most common and annoying pests. It feeds on decaying vegetable and organic matter. Control should include removal of all breeding places.

bage cans or dumps. Screens must be placed on dwellings and barns and even then some chemical means will be required to eliminate the pest. Flies are active during the daylight and rest at night on ceilings, upper walls, drapes, cornices, light cords and other high places. In planning long term fly control, it may be necessary to spray these resting places with residual insecticides.

Hornets, Wasps, Yellow Jackets and Bees

Honey bees are ordinarily beneficial to man, but if they attack or become colonized in his house, they can be undesirable tenants. Wasps, hornets, and yellow jackets build nests in carports and garages, under eaves and sometimes in shrubbery. Not only are their presence annoying, their stings may be painful and sometimes serious. A number of people have died because of sensitivity to the venom or because of tetanus bacteria introduced by the stinger.

If a colony of bees is found, it is best to call in an expert to remove it. If the bees are sprayed, the honey should be removed as it can attract ants, carpet beetles, cockroaches and other undesirable insects.

If bees become a pest, they can be eliminated with chemicals. Apply insecticide to the nest, or if it is in the ground, cover with dirt. Caution should be taken when knocking down unsightly nests; remaining insects may attack in defense of the nest.

Spiders and Scorpions

Spiders, while a nuisance around the house, are frequently beneficial because they destroy many forms of destructive insects. Almost all common "house spiders" are harmless but are obnoxious through their unsightly webs.

The only poisonous spiders in Florida are the black widow group which can inflict a dangerous venomous bite. Although painful, it is not fatal. The black widow spider is rarely found in the home, but if discovered on the premises it should be destroyed. It is jet black, about a half-inch long with longer legs than most spiders, and has a red hourglass figure on the underside of its abdomen. Should a person be bitten, he should apply an ice pack to the affected area and contact a physician immediately.

The sting of Florida scorpions can be painful. The venom is insufficient to prove fatal to adults. However, the sting may be dangerous to infants. The insect has a body resembling a crab. It may grow as long as two inches with a fleshy curved tail containing the stinger in the end. Although the pest lives outdoors, it may invade the home looking for insects; if molested they will attack a human. The best method of control is to eliminate all hiding places and destroy the insect by crushing it with any heavy object.

Ticks

As far as Floridians are concerned, ticks are associated with dogs; but they are a problem when they get on a child. In some instances, houses have been infested with the pest, but the problem started with a dog whose infestation went unnoticed or uncared for.

Ticks can be found usually around the dog's ears or toes. They vary in size and color, but can be identified as small bulbs or balloons attached to the dog's skin. These pests must be removed

with a low pull and destroyed. Care must be taken to see that the head of the insect does not break off. It must be assumed that the pet's sleeping area, indoors or out, is infested. If the animal has been in the house, an infestation may have already begun there. After adult ticks have had a blood meal, they drop and begin laying eggs. A vacuum cleaner should be used to thoroughly remove ticks, eggs and immature insects. Chemicals should be applied to baseboards, floors and other hiding places.

A MATTER FOR RESEARCH

THERE are many other insects in Florida. There are fleas that carry parasites, silverfish that damage books, clothing and fabrics, powder post beetles that damage furniture, and many pests that invade the kitchen cupboards.

There are many sprays and aerosol "bombs" to kill those that demand immediate attention. For long lasting effect, it is best to contact a licensed, qualified pest control operator. He knows about all kinds of pests and how to deal with them. He knows about insecticides and how to use them safely.

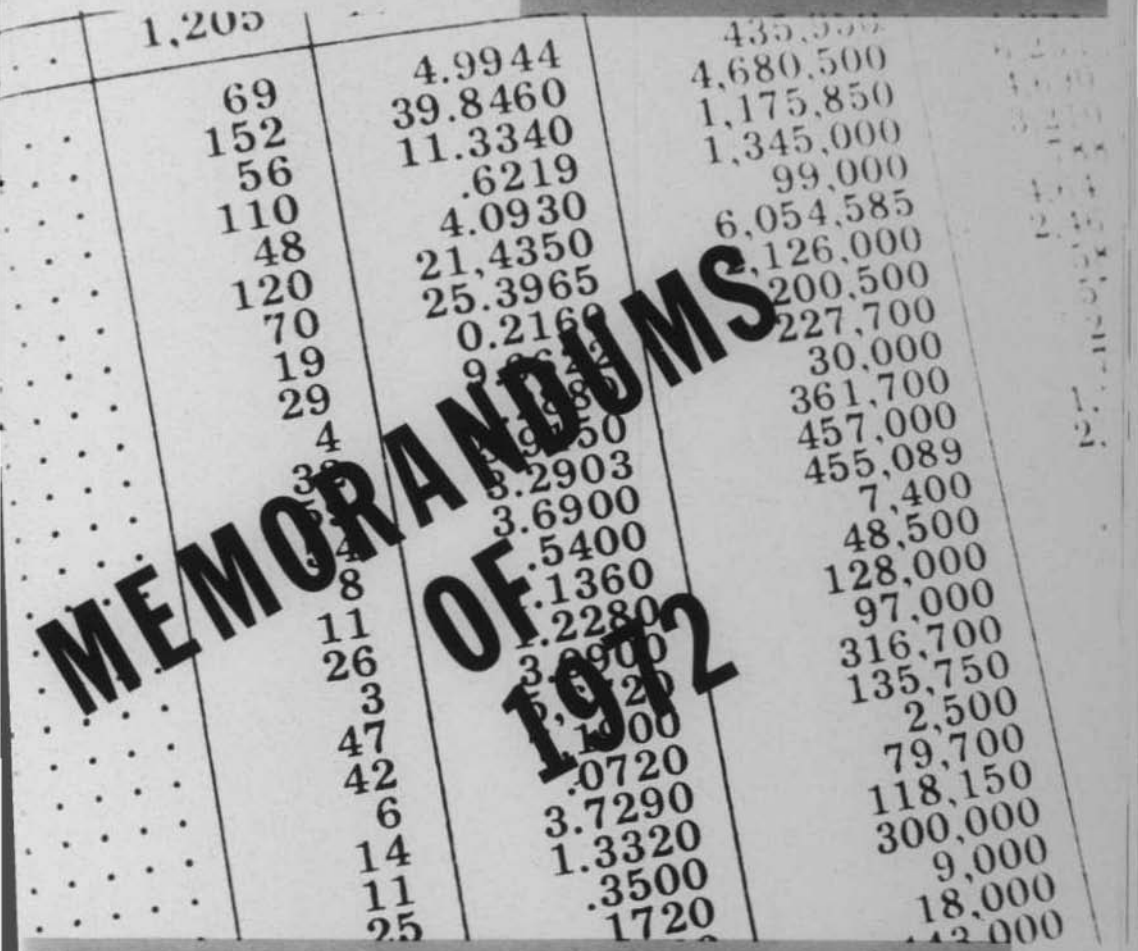
Scientists say there are some 965,000 species of animals in the world and of these 750,000 are insects—such as dog flies, love bugs, and eye gnats. And there are also rodents. Continual warfare against these pests is a reality of life.

Research is the first step toward the eradication of pests. Through research we find out how insects breed, live, what they eat, how far they fly, and what will exterminate them. Elimination of the pests through the use of proper insecticides comes next.

Research costs money. Eradication costs money. And the Division of Health of the Department of Health and Rehabilitative Services cannot carry out its projects to do research on and eliminate the pests that annoy without the support of the people of Florida and their State Legislature.

CREDITS: Illustrations on pages 113 and 118, courtesy of Florida Publishing Company; page 117, drawing by C. E. Leach; pages 134, 135 and 136, from paintings courtesy of Gregy Chemical Corporation.

FLORIDA HEALTH NOTES



MEMORANDUMS OF 1972

VOLUME 65 — NO. 6
JUNE 1973

MEMORANDUMS of 1972 to Mr. and Mrs. Florida

FLORIDA STATE LIBRARY


0 20 40 60 80 100

MEMORANDUMS OF 1972

TO: Mr. and Mrs. Florida

FROM: The Division of Health, Department of Health and Rehabilitative Services

SUBJECT: Report of your health department for 1972

Public health services are provided in Florida by the Division of Health of the Department of Health and Rehabilitative Services and its partners, the 67 county health departments.

The state health agency is responsible by law for the health of the people of Florida and it is also responsible for keeping the state officials and citizens informed of the status of the public's health.

Public health is the science and art of preventing disease, prolonging life, and promoting health and a productive life through organized community efforts. The Division of Health is concerned about the health of the community—which is a summation of the health of all the people. But a state can never be healthier than the least of its citizens. It is in the interest of these groups and the citizenry as a whole that the efforts of the Division of Health are spent.

These memorandums are to you, Mr. and Mrs. Florida, your family and friends, telling you what services were given in 1972 by the Division of Health and how it spent the tax dollars allotted to it by the various legislative bodies. We will also tell you about the services offered to the various groups in the state, how we pro-

---

ANNUAL REPORT (cover photo)—This issue of Florida Health Notes is a memorandum to Mr. and Mrs. Florida. It presents the highlights of the 350-page report published by the Division of Health. Laboratories of the Division of Health (opposite page) performed over 3.5 million examinations in 1972—an increase of 6.5 per cent over 1971.

tect you from unhealthy situations in the environment and from communicable diseases.

Each June, **Florida Health Notes** carries a summary of the activities of the Division of Health as reported in its **Annual Report,** a 350-page collection of reports from all the bureaus, sections, and programs of the health agency—plus a summary of the activities of the county health units.

SUBJECT: Maternal Health and Family Planning

One basis for healthy citizens is to see that they have a good start in life. This begins with healthy mothers. Child spacing (family planning) is one way of providing better health for mothers and their infants.

Through public health clinics, 100,085, or 38.3 per cent, of the 261,177 indigent women of childbearing age (according to the Dryfoss-Varky-Polgar Formula) in Florida were provided contraceptive services. Nearly three-quarters of the women received oral contraceptives and the balance received intrauterine devices and other methods of birth control.

The Florida State Plan (a statewide family planning service delivery system) was approved in June and was placed in operation. The development of the plan will take three years. The goal is to have medically recognized knowledge and means of family planning, including fertility and other health-related services, available to mothers. This will help them to determine the number and spacing of children. The Division of Health has eight

---

MOTHERS AND INFANTS (opposite page)—Child spacing and maternal and infant care projects are just two of the ways the Division of Health uses to improve the health of mothers and children.

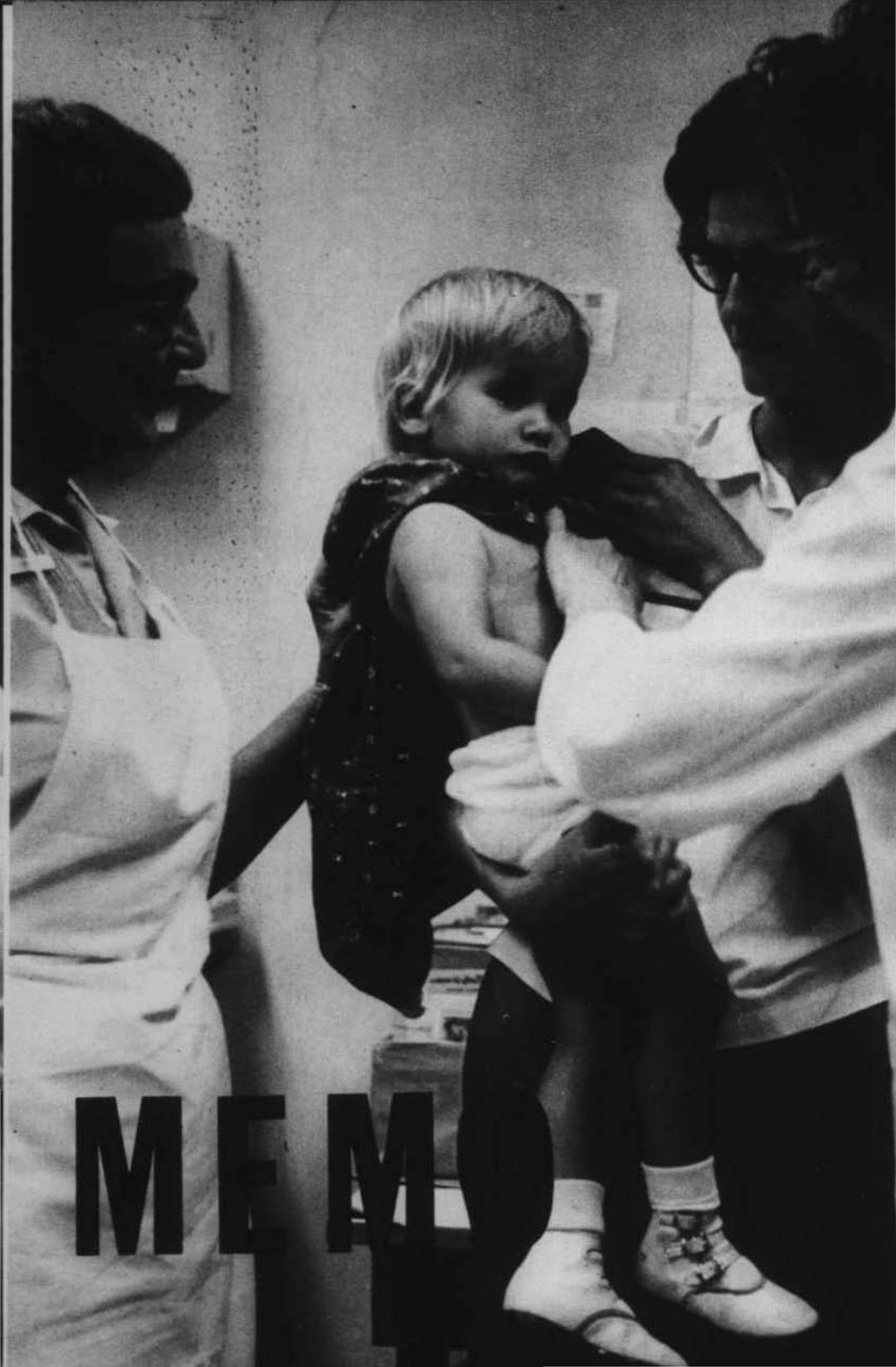
FLORIDA HEALTH NOTES

Published monthly by the Division of Health (Wilson T. Sowder, M.D., M.P.H., Director) of the Florida Department of Health and Rehabilitative Services. Publication office, Box 210, Jacksonville, Florida 32201. Second Class Postage paid at Jacksonville, Florida. Printed since 1892, this publication is for individuals and institutions with an interest in the state's health program. Permission is given to quote any story providing credit is given to the Division of Health. Editor: Robert A. Schoonover, M.A.
Post Office Form 3579 should be mailed to Box 210, Jacksonville, Fla. 32201

VOLUME 65, NO. 6 JUNE, 1973

MEMO




MEMO

family planning projects funded through the National Center of Family Planning under Title X of the Public Health Act of 1970.

In addition, the 1972 Legislature passed the Comprehensive Family Planning Act which authorized, among other things, the providing of family planning services to minor girls who might have illegitimate babies.

The five Maternal and Infant Care Projects continued to operate and provided prenatal, natal, and postpartum care to mothers who were having complications with their pregnancies. This was to reduce complications of pregnancy and premature deliveries.

A two-year project was instituted in Washington, Walton and Holmes Counties to provide obstetrical care to 120 indigent women of a rural area who had no medical services available. Social services were developed in the maternal health and family planning programs and became part of their operations.

A termination of pregnancy law became effective in April and during the remainder of the year 3,378 pregnancy terminations were reported. Nearly 1,100 of these took place in December.

SUBJECT: Services for Children and Youth

The Division of Health placed new emphasis on services to children and youth with the creation of a Child Health Section. The aim was to coordinate the programs involving children, give the work increased visibility and administrative stature, and better cooperation with the Bureau of Maternal Health and Family Planning for better babies, better mothers, and better families.

Under a contract with the Division of Family Services, the Division of Health started an early and periodic screening, diagnosis and treatment program (Medicaid screening) for children of families receiving welfare. Failure to implement this program in the past had jeopardized federal support of existing portions of Florida's Medicaid programs. Some 90,000 children between birth and six years of age were eligible. Many of these children had already been seen in public health clinics.

EMPHASIS ON CHILDREN (opposite page)—Thousands of children are screened for defects and diseases in public health clinics.

Sickle cell traits were found at a rate of one out of 10 black children, but no child who was not already known to have the disease was detected in the Medicaid screening program. Three children were detected to have phenylketonuria (PKU) through the PKU screening program. The hearing of 181,489 children was tested and over 6,100 were referred for hearing corrections. Special efforts were made to screen the hearing of preschool children. Approximately 19.2 per cent of all five-year-olds were classified as indigent. Of the 356,631 children receiving vision screenings by county health departments, 28,117, or 8.2 per cent, were referred for additional examinations.

SUBJECT: Role of the Public Health Nurse Consultants

Florida has nearly a thousand public health nurses located in the county health departments and it is a major responsibility of the public health nursing consultants to oversee nursing activities so the quality and scope of public health nursing can be maintained. Each consultant has a specialized clinic area of nursing practice—infant and child health, school health, midwifery, maternity and family planning, chronic diseases and aging, communicable diseases and epidemiology, migrant health, and mental retardation. Nursing consultants made some 350 visits to the county health departments during 1972 to help maintain the quality of nursing care given by local health units.

SUBJECT: Nutrition Services

Floridians' increased awareness of proper nutrition was reflected in the additional workload of the Division of Health. Of necessity, priorities continued to demand nutrition consultation for high risk populations—women of childbearing age, children, chronically-ill people who were treated by diets, older adults, and families on marginal incomes.

An institutional nutritionist coordinated the nutritional care and food services of institutions operated by the Department of Health and Rehabilitative Services. She assisted with food service, staff training, nutrition education and diet counseling.

A recipe book, "Sunshine Meals Using Your Meal Plan for Diabetes" was developed and printed by the Division of Health.

SUBJECT: Dental Health Services

The Division of Health promoted the improvement of dental health by prevention, control, and where possible, correction of dental diseases. Prevention activities included the promotion of controlled fluoridation of public water supplies, topical application of fluorides by dentists and self-application programs, supervised toothbrushing, consultation with city councils, county health departments and educators, and inservice programs for nurses, sanitarians and teachers.

Twenty public water supplies, serving an estimated population of 1.2 million persons in 60 cities and towns, had controlled levels of fluoride. Another 25 water supplies, serving an estimated 623,000 people, provided water that has fluoride as a natural component at levels beneficial to dental health.

Thirty-three county health departments operated dental clinics. Thirty-one dentists were employed full-time; in some counties, dentists from private practice were paid on a fee-for-service basis. Thirty-four county health departments were without dental equipment or dental services. Over 64,000 children, youth, maternity patients, and other persons were given dental care.

Approximately 400 students in a Putnam County elementary school were selected for a demonstration project that included the use of a fluoride mouth rinse.

SUBJECT: The Problems of Chronic Diseases

Chronic diseases continued to be a problem in the population. Over a million of Florida's 7.2 million population were listed as being over 65 years of age. According to a federal government report, 81 per cent of this million were reported to have one or more chronic conditions which limited their activities. Another 16 per cent were unable to carry on any major activities due to disabilities.

Cancer continued as the second leading cause of death in Florida, exceeded only by heart disease among people 45 years and older. In children ages five to 14, cancer was the leading cause of non-violent death—exceeded only by accidents. More than half of

the deaths (8,325 of the estimated 15,857 cancer deaths in 1972) were attributed to cancer of two major sites: digestive organs (including the peritoneum in the abdomen) and the respiratory system. Cancer of the respiratory system (lung cancer) is currently a killer among men and is directly related to the use of cigarettes. There is presently an increase in lung cancer in women. Cancer of the cervix is the second most common cancer affecting women, exceeded only by incidence of breast cancer. The pap smear is the best casefinding procedure. Over 97,000 medically indigent women were tested in public health and other clinics with approximately 200 cases of cervical cancer detected and treated.

Diabetes ranked as the eighth leading cause of death with an estimated 1,342 Florida residents dying of the disease. This was an increase of 1.6 per cent over 1971, which had 1,308 deaths. Florida appropriated $100,000 for insulin for approximately 5,000 medically-indigent, diabetic patients. These people received their insulin through county health departments or hospital diabetic clinics.

Health profile screening programs to detect diseases were emphasized and supported where such programs met the needs of the community. During the past 10 years, over 9,500 individuals were identified with suspected ocular hypertension and referred to ophthalmologists for diagnosis and treatment of glaucoma. Casefinding activities were reported from 47 county health departments. Approximately 41,000 persons were screened in routine programs and 1,377 were referred to physicians.

SUBJECT: Activities in Tuberculosis Control

The two state tuberculosis hospitals showed a decrease in the number of patients and the average length of patients' stays during 1972. This drop was due to new drug therapy under which many tuberculosis patients were able to stay at home and be treated in health department clinics. Thirty-four per cent of the 1,517 newly reported active cases of tuberculosis in 1972 had treatment initiated in the community by county health department clinicians or private physicians.

Mobile X-ray clinics were busy with one new active case found for each 1,902 films reviewed. County health departments and

---

EVALUATION (opposite page)—The Division of Health reviews plans for hospitals and nursing homes.


MEMO

tuberculosis and respiratory disease associations made more than 686,000 X-rays and discovered 3,163 suspected tuberculosis cases.

SUBJECT: Hospitals, Nursing Homes and Home Health Services

The Division of Health was made responsible for the preparation of rules, regulations, and licensure relating to termination of pregnancies. At the end of the year, 73 hospitals were licensed for pregnancy terminations.

The 1972 Legislature passed the Health Maintenance Organization Act and gave the joint responsibility to the Department of Insurance and the Department of Health and Rehabilitative Services. The Division of Health's role was to assure that the comprehensive health services required by the subscribers would be given under reasonable standards of quality care. The basic components of the Health Maintenance Organizations will be emergency care, inpatient care, physician care, ambulatory diagnostic treatment, and preventive health care.

Hospital and nursing home beds continued to increase. Eight new hospitals were licensed by the Division of Health. Four others ceased operations, leaving a total of 214 facilities with over 35,800 beds and 2,500 bassinets.

The Division of Health continued its responsibility for functions involving the re-certification of approved providers of services under Medicare, including hospitals, extended care facilities, home health agencies and rehabilitation clinics.

Ten new nursing homes opened their doors for the acceptance of patients; three nursing homes closed voluntarily or through persuasive efforts of the health agency. The Division of Health licensed 385 nursing homes, homes for the aged, and homes for special services.

The health agency continued to evaluate nursing homes for the Division of Family Services under a contract. The surveys emphasized the quality of patient care and the provider's performance of all functions according to federal regulations.

Consultants in home health services coordinated professional advice and Medicare certification for 42 home health agencies which provided home nursing care for Medicare patients.

IMMUNIZATIONS (opposite page)—A large number of children entering Florida's schools were immunized in 1972 against childhood diseases. However, many infants, unlike this one did not receive their immunizations.


MEMO

SUBJECT: The Communicable Diseases

The Division of Health provided continuous surveillance of disease cases in the state as a basis for control of communicable diseases. It collects, compares, and analyzes weekly data arising from private physicians, hospitals and county health departments.

The number of gonorrhea cases continued to increase during the year until it reached epidemic proportions. The venereal disease program, assisted by federal funds, was greatly expanded. Emphasis was placed on identifying infected, asympomatic females who contributed to the large increase in the number of cases. Of the 43,032 cases reported, nearly 6,000 were reported through local screening programs. The number of cases reported in 1972 represented a 40 per cent increase over 1971.

Influenza-like diseases were reported in abundance in 1972. A total of 2,656 cases was reported during the first three weeks of January—approximately five times the number reported for the same period in 1971. The laboratory confirmed that only about 20 per cent of the cases were Influenza A-2.

A large number of children were immunized under the Compulsory Immunization Law which required that all children entering school be immunized against diphtheria, whooping cough, tetanus, poliomyelitis, measles, and rubella. Of more than 195,000 children enrolled in kindergarten and first grade, 160,000 were fully immunized. No outbreak of childhood diseases occurred in elementary schools but cases were reported among older children and youngsters in day nurseries and day care centers who were not covered by the law.

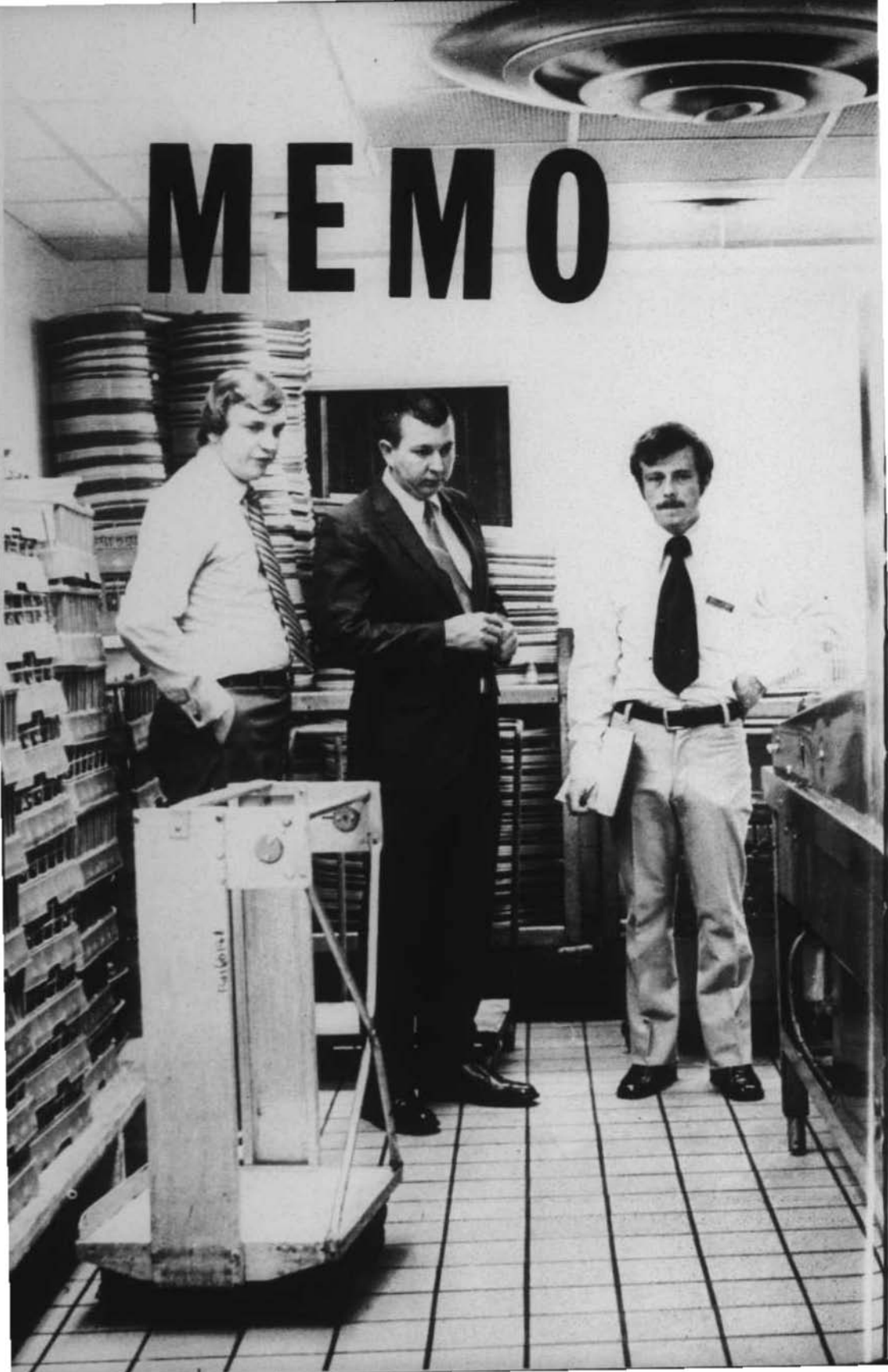
The Division of Health and U. S. Public Health Service recommended the discontinuance of routine immunizations for smallpox. Ten cases of tetanus occurred with seven deaths reported. This totally preventable disease continued to plague Florida.

SUBJECT: Environmental Health

A Governor's Executive Order transferred municipal waste water and solid waste planning activities from the Division of

---

FOOD INSPECTION (opposite page)—In behalf of better food service in Florida, county health department sanitarians made some 228,000 visits to food establishments.


MEMO

Health to the Department of Pollution Control. The management of sanitary landfills was also transferred but the change of administration will not take place until mid-1973.

Florida had 38,116 food establishments, including eating and drinking places, food processing plants, abattoirs, shellfish and crustacea plants, grocery and meat markets, dairy farms and milk production plants. County health department sanitarians made over 228,000 visits to the milk and food establishments.

Permitted mobile home and travel trailer parks increased by 314 to a total of 4,212. These have 230,580 trailer spaces. Permits were issued to 113 recreational camps which could accommodate nearly 20,000 persons.

Migrant farm workers were housed in 284 permitted camps which provided housing for over 41,000 migrants and their families. The law was changed to define a labor migrant camp as one housing five or more seasonal, temporary or migrant workers—rather than the requirements of 15 as before.

The Division of Health entered into a contract with the U. S. Food and Drug Administration to conduct a survey of the sanitation level of food service establishments serving interstate highway travelers. Food service establishments at all interstate highway interchanges will be compared with a statistical sample of randomly selected establishments in some 50 per cent of the counties.

Certified food hygiene program coordinators were located in 51 county health departments, giving food hygiene programs particular attention. They also assisted in the training of food service workers. Some 9,700 persons completed food service workers' courses during the year.

The construction of public water supply facilities increased and state, county and regional engineers approved plans for 2,188 public water systems which had an estimated cost of $115 million. A total of 1,380 plans for proposed public swimming pools was approved. These had a cost of $18 million. The average cost was $13,000.

Northwest Florida remained the major source of oysters. The landings in Franklin County represented 85 per cent of the total—

which was 2.9 million pounds during the first 11 months of the year. Over 16 million pounds of blue crabs were harvested and 1.6 million pounds of stone crabs.

Frequent visits were made to oyster and scallops shucking houses, clam processing plants, and crabmeat picking and packing plants. These visits were in the interest of enforcing sanitary regulations, collecting product and water samples for analysis, and checking water supplies.

SUBJECT: Radiological Health

New problems concerning the licensing of radioactive materials were encountered by the Division of Health during the year. A large Florida hospital was in the middle of constructing a nuclear cyclotron for the manufacturing of radioactive materials for medical use. A regional laboratory was licensed to establish a plant in Florida for the manufacturing of radiopharmaceuticals. The use of such radioactive materials became popular—allowing physicians to retain the material longer and mix individual doses. These facts made necessary a re-evaluation of the licensing procedures.

A total of 611 licenses for the use of radioactive materials was in effect at the end of 1972. These included 209 for medical use and teletherapy units by private practitioners; 122 by hospital medical use and teletherapy units; 33 for academic use; 227 for industrial use; and 20 for other uses. There were also 10,903 radiation machines (X-ray) licensed of which 95 per cent were used for the healing arts.

The levels of radioactivity around the nuclear power plants remained about the same as in previous years. Unit Three of Florida Power and Light Company's Turkey Point became Florida's first operational electric generating nuclear reactor power plant. Levels of radionuclides remained unchanged following the start-up of the plant.

SUBJECT: Mosquito and Pest Control

The changing public attitudes toward health and the environment, new legislation on pesticides and ultra low volume pesticides made 1972 a noteworthy year for mosquito and pest control.


MEMO

Methods of water level management (ditching, diking, flooding, and filling) had been employed for many years to prevent mosquito breeding in wetland areas. This was brought to a standstill by regulations, laws, and rules adopted and enforced by the various state and federal agencies. Maintenance work was permitted; new projects approval was difficult to obtain. The protection of the environment, in the minds of many people, transcended the continuance of the economic development of Florida and the health and comfort of its citizens and visitors.

Fifty-three counties and mosquito control districts budgeted $11.7 million for mosquito and insect control. This included $3.2 million for landfills.

Eight hundred and nineteen pest control business licenses and 7,217 employees identification cards were issued. The Division of Health investigated 179 property owners' complaints against various pest control operators.

The 1972 dog fly season was a light one—despite the facts that the winter of 1971 was mild and large numbers of immature dog flies were found in breeding sites on farms in West Florida as early as mid-January. The first major outbreak of the year occurred from Pensacola to Fort Walton Beach on August 18, and from Walton County to Taylor County on August 20. Southeasterly winds kept the flys from the beaches during September and October.

SUBJECT: Animal Diseases Transmissible to Man

Because of no evidence of St. Louis Encephalitis in the state during the past two years, field activities in the surveillance of arthropod-borne encephalitis were curtailed.

Eighty-seven cases of rabies in animals were reported. Raccoons and several species of bats accounted for most of the cases.

MASKED CARRIER (opposite page)—Fifty-seven cases of rabies in animals were reported in 1972—most of them in raccoons and bats.

Ninety-six per cent of the reported human exposures resulted from contact with wild bats or raccoons. There were no reported outbreaks of raccoon rabies during the year. All of those reported were isolated cases. An epidemic among animals took place in Sarasota County; but of over 60 ill raccoons submitted for rabies examination, only one was positive for the disease. Efforts to locate another etiolgical agent was initiated but the study has not yet been completed.

SUBJECT: Laboratory Services

During 1972, the Division of Health's laboratories performed over 3.5 million examinations—an increase of 6.5 percent over 1971. Moderate increases in gonorrhea smears and cultures, syphilis serology, water and dairy product testings, and clinical and forsenic chemistry were partially offset by decreases in throat cultures and food examinations.

Additional personnel and the production of a large quantity of "Transgrow" media required for submitting gonorrhea cultures were made possible by a U. S. Public Health Service supported venereal disease control program. There was an attempt to identify and treat the large reservoir of cases found in the asymptomatic female carrier. A 23 per cent rise in the number of gonorrhea smears and culture examinations was noted.

Demands for drinking and pollution water tests rose 20 to 13 per cent, respectively; especially in the West Palm Beach and Orlando Regional Laboratories. This reflected the tremendous population growths in these areas.

Under the Florida Clinical Laboratory Law, 554 laboratories were registered. These included 260 independent laboratories; 235 hospital laboratories; 22 blood banks; 25 plasmaphoresis; and 12 public health facilities. There were 6,047 laboratory directors, supervisors, technologists, technicians, and trainees licensed by the Divison of Health.

Three additional field inspectors were hired under a $85,000 federal grant awarded by the Governor's Highway Safety Com-

mission to complete the required complement of needed personnel to carry out the statewide implied consent law. This law was designed to help eliminate the menace of the drinking driver from Florida's highways. Over 1,178 visits were made to 233 law enforcement agencies and training schools; 2,432 qualified operators of the breathalyzer machines were tested; and 366 machines certified and registered for performance of legally accepted breath alcohol tests.

SUBJECT: Emergency Services and Health Mobilization

The Division of Health signed a cooperative agreement with the Florida Regional Medical Program which was aimed at expanding and developing the Emergency Medical Services in Florida. More than 20 community colleges taught the Emergency Medical Technician Training Course and at least 750 persons completed the training and were listed on the state's EMS registry.

The health mobilization staff members conducted 20 community disaster exercises and inventoried 43 packaged disaster hospitals and hospital reserve disaster units. A total of 833 medical self-help training courses was taught to 39,470 students. Since its inception, over 403,000 persons have received this training.

SUBJECT: Publications and Education

Florida Health Notes celebrated its 80th birthday in June. Issues published during the year included health and the environment, water supplies and septic tanks, venereal disease control, family planning, health of Florida's children and youth, childhood diseases and preschool immunizations, food hygiene, hypertension, food facts and fads, new health knowledge, the use of community health workers, aides and volunteers in public health programs, and a simplified annual report. Circulation continued at nearly 20,000 copies a month.

Pamphlets distributed reached 484,537 with those on communicable diseases and nutrition the most popular. The Division of Health circulated its audio-visual materials over 20,000 times. These were viewed by an estimated 3.2 million persons. The pub-

TEXT MAY BE LOST DUE TO TIGHT BINDING

lic health library's collection totaled 27,181 volumes, an increase of almost 500 books.

SUBJECT: Facts and Figures

Florida continued to grow and its population reached an estimated 7.2 million persons in 1972. The birth rate was down from 16.6 per 1,000 persons in 1971 to 15.1 in 1972. There were 109,115 births reported. Infant death rates were also down—from 20.7 in 1971 to 19.4 in 1972.

However, deaths rose to 84,638, or a rate of 11.7 per 1,000 persons—as compared with 10.9 in 1971. Marriages were also up to 82,446; divorces and annulments totaled 51,493.

Public health expenditures for the fiscal year ending June 30, 1972, amounted to some $54.9 million. Seventy per cent was for salary payrolls and other personnel who gave health services to the people of Florida. Funds were derived from the following sources: 47 per cent from the state; 27 per cent from local government bodies; and 27 per cent from federal sources.

Federal grants funded projects in maternity and infant care, children and youth services, tuberculosis control, migrant health, family planning, immunizations, and venereal disease control—just to name a few.

Health services to Florida citizens and visitors were provided or supported by over 1,000 state-level employees, and over 3,000 workers in county health departments.

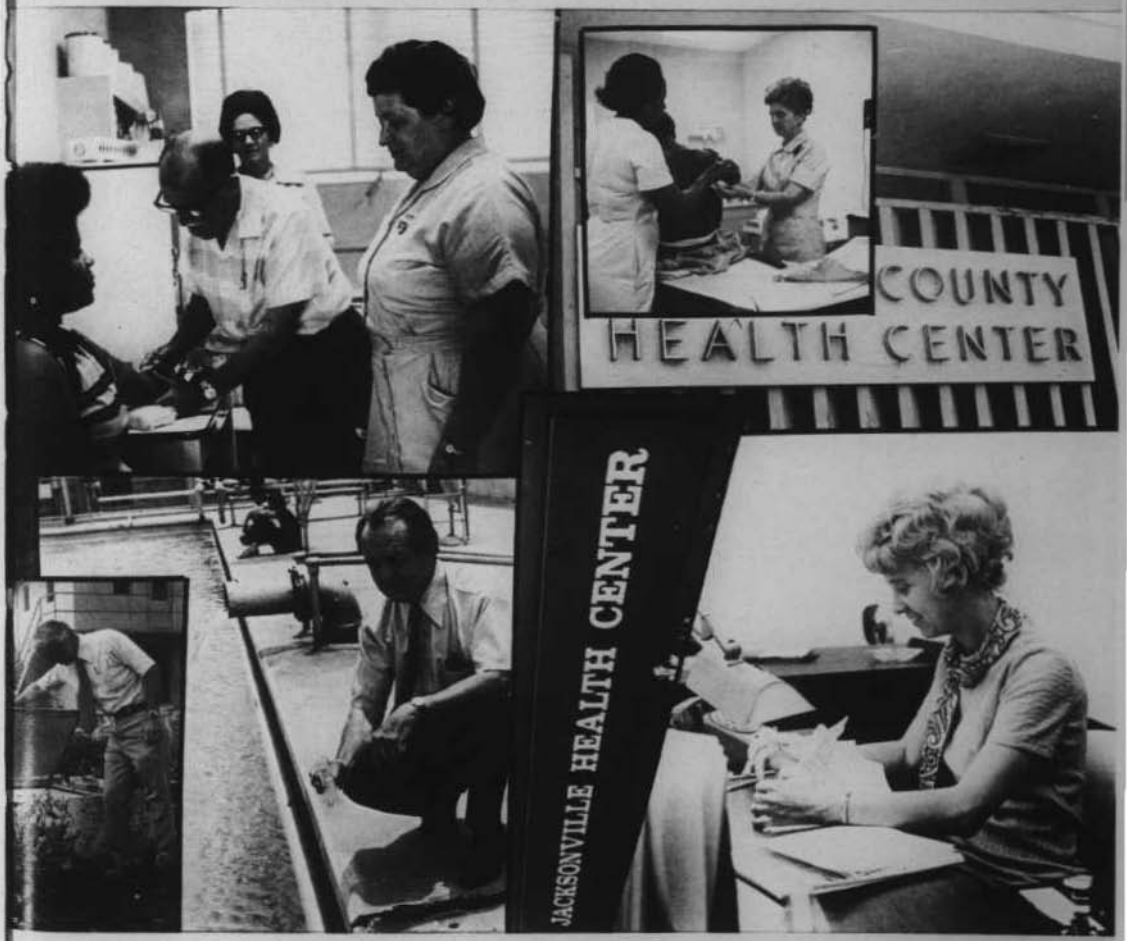
A Memorandum to You

We know that a memorandum is usually an informal, interoffice communication. But we are writing this memo to you, Mr. and Mrs. Florida, because you are the ones who pay taxes to support us. We know that we are responsible to you, the Legislature and other state officials to protect your health and prolong your life. Healthy people make good, responsive citizens who are interested in protecting the community's health. Therefore, we dedicate our public health service and this summary of our **1972 Annual Report** to you, the people of the Sunshine State.

US-ISSN-0015-4105

FLORIDA HEALTH NOTES

VOLUME 65 — NO. 7 JULY 1973



What is a COUNTY HEALTH DEPARTMENT?



THE STAFF (Cover photo) — The basic county health department staff has a director-physician, public health nurse, sanitarian and clerk. In addition, many county health departments have other professional, technical and non-professional workers.





CLINICS — One of the places where the people of Florida are assisted with their health needs is the county health department clinic.

What is a COUNTY HEALTH DEPARTMENT?

The county health department is the local, official governmental agency established in your county to meet the health needs of the citizens and protect them from—among other things—communicable diseases, sanitary nuisances, and environmental dangers. It educates people in health matters, detects their chronic diseases, and helps prolong their lives.

As a representative of the Division of Health of the Department of Health and Rehabilitative Services, the county health department is in your community to serve you and to see that your health needs are met.

The county health department

- operates as part of a statewide surveillance system and knows when Johnny Smith comes down with the measles. It helps immunize other children to protect them from the disease.

- takes action to obtain clean up of a sanitary nuisance when a sewage line of the Palm Hills sewage treatment plant breaks and raw sewage is dumped into a ditch near a housing development.

- sees that teenage Nancy Taylor, who has just had a baby, learns how to care for her infant.

- assists the staff of the Brookdale Elementary School in helping Roger, Polly and Sue to adapt to their learning situations by identifying and assisting with the children's health needs.

The Florida system of county health departments has been developing and expanding since 1931. It is a system that is flexible, has community and county participation, and best of all, relates to the people whom it serves.

This issue of **Florida Health Notes** will tell you about the county health department, how the system began, how it fits into

the Florida scene, who staffs it, what the county health department does to protect your health, and how it relates to the state agency—the Division of Health.

The Need for Local Representation

Public health, by the nature of its service, has always needed representatives at the local level. It needs professional workers in the community to carry out its programs directly with the citizenry. No public health agency can operate successfully without this cadre of physicians, public health nurses, sanitarians, clerical and other professional workers to bring its services to the people. And the overall state agency is only as strong as its local representation.

The need for local representation was seen early in Florida's public health experience. The Florida Constitution of 1885 provided for a State Board of Health and the establishment of county boards of health—but it divided the authority for public health between the two.

Each county adopted its own regulations for the control of epidemic diseases, particularly yellow fever. Some counties tried to keep travelers and mail from entering from other counties, particularly where the disease was prevalent. Physicians were not allowed to visit from one county to another. Differing county rules were enforced by persons with deep fears and shallow medical knowledge. It was evident that the division of authority between the State Board of Health and the county boards of health was a mistake. The Legislature, on the recommendation of Dr. Joseph Y. Porter, the first state health officer, abolished the county boards of health.

FLORIDA HEALTH NOTES

Published monthly by the Division of Health (Wilson T. Sowder, M.D., M.P.H., Director) of the Florida Department of Health and Rehabilitative Services. Publication office, Box 210, Jacksonville, Florida 32201. Second Class Postage paid at Jacksonville, Florida. Printed since 1892, this publication is for individuals and institutions with an interest in the state's health program. Permission is given to quote any story providing credit is given to the Division of Health.

International Standard Serial Number—US-ISSN-0015-4105

Editor: Robert A. Schoonover, M.A.

Post Office Form 3579 should be mailed to Box 210, Jacksonville, Fla. 32201.

But evidence soon appeared that a public health representative was needed in each county. Dr. Porter selected practicing physicians to act as "county agents" for the State Board of Health. Most of the work of these agents was limited to reporting on communicable diseases but they did not build a foundation for local public health units. There is no indication that county health agents were used after Dr. Porter retired in 1917.

Florida then developed a loosely-woven district scheme with the state divided into five districts. Each district had a district health officer, a sanitation officer, a public health nurse and a clerk. The headquarters were located at a central point. These districts usually consisted of 12 to 15 counties, each embracing a very large area with more than 300,000 population. It was obvious that such a setup was inadequate to administer health programs in the area.

During the period of 1917 to 1932, Florida went through a period of retarded public health growth. It was during this time that many county health units were established in other Southern states under the sponsorship of the International Health Board of the Rockefeller Foundation, but none were established in Florida. However, once Florida's system of county health departments was started, it grew quickly and has remained strong.

Despite the health "retardation" of the 1920's in Florida, some individuals retained an interest in the county health units. A report was prepared in 1921 by Dr. George Dame, director of the State Board of Health's Bureau of Communicable Disease and Health Units (with the assistance of the Rockefeller Foundation), which advocated a public health unit in each county with a minimum staff of a physician-health officer, public health nurse, sanitary inspector and an office assistant. The report stated that the staff and miscellaneous expenses could be provided by a basic budget of $10,000, of which the county would contribute at least half.

The health units would be a component of the state's public health organization with direct authority vested in the state health officer and the operational control under the Bureau of County Health Units. This plan was designed to use the strength and avoid the weaknesses of public health operations in other states.

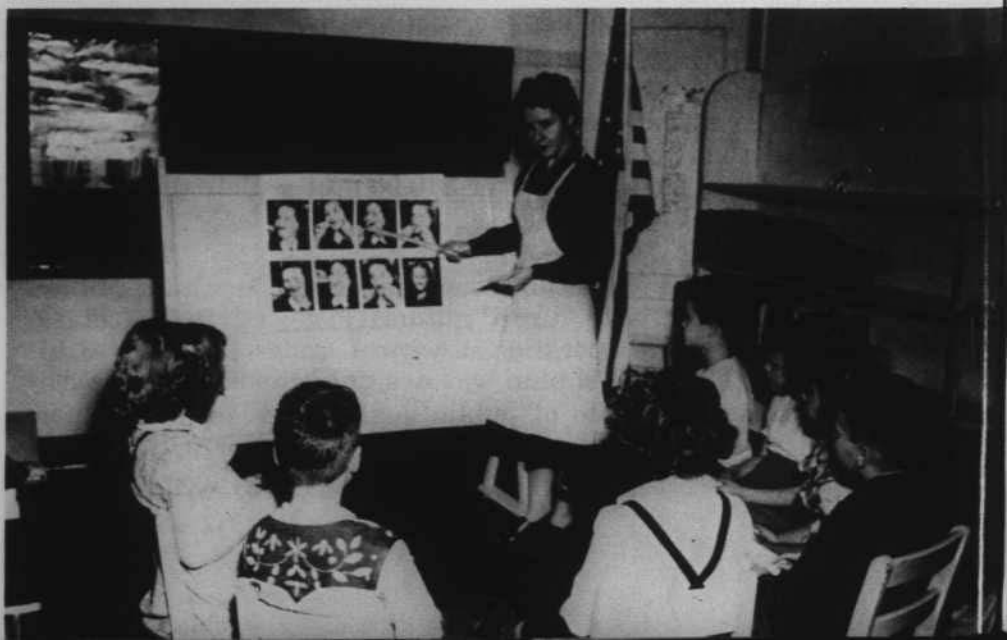
The Birth of the County Health Departments

The residents and officials of Taylor County were the first to experience the effects of public health programs that cleaned up malarious swamps and built privies for the control of hookworm. In 1930, they organized Florida's first county health department.

The next year, the Legislature passed the County Health Unit Enabling Act (Florida Statute 154) which wrote into law many of the recommendations made by Dr. Dame's 1921 report. One particularly important point was that small counties could obtain the services of a health officer by joining together into one unit.

Leon County formed the second health unit in 1931, followed 14 months later by Escambia County. Fiscal resources came in substantial amounts under the Social Security Legislation of 1935. This was followed by the provision of state funds to aid county health units—which precipitated a period of stimulated growth of public health in Florida.

EDUCATION — In the early days of the county health departments, public health nurses taught schoolchildren about health. Today, they serve as consultants to schools and teachers.



From 1935 through 1941, 32 county health departments were organized. Progress slowed during World War II (eight units joined during the war), but action picked up between 1946 and 1952, when 23 counties formed health units. St. Johns County joined the system in 1960. With the consolidation of the Jacksonville-Duval County units in 1971, the family of health units was complete.

Providing a county health department was not easy. Taylor County's unit folded for three years after it was started. During World War II, local health units in Calhoun, Liberty, Hendry, Nassau, Osceola, Levy and Flagler Counties discontinued their operations for several years. One health official noted that the withdrawal of a full-time health service to the community was the same as an individual giving up his automobile and going back to the ox cart. He soon realized he was not getting anywhere fast.

Legal Setting - Statute 154

The county health department is the basic strength of the Florida public health system. As stated previously, the Florida Legislature passed the County Health Unit Enabling Act in 1931. This law has been changed very little since it was written.

Florida Statute 154 says, "The several counties of the state and cities therein, may cooperate with the division of health of the department of health and rehabilitative services in the establishment and maintenance of full-time local health units in such counties for the control and eradication of preventable diseases, and inculcate modern scientific methods of hygiene, sanitation, and the prevention of communicable diseases."

The law says that counties with populations exceeding 100,000 may levy an annual tax not to exceed one-half mill for the financing of a county health unit. Those counties with populations not exceeding 100,000 may levy a tax of one mill; those with populations not exceeding 40,000 may levy a tax of two mills on the dollar on all taxable property. The proceeds of these taxes are paid to the Division of Health for deposit with the state treasurer in a fund known as the Local Health Unit Trust Fund. Such funds may be expended by the Division of Health only for the purposes of providing health services in those counties.

A special provision of the Statute is that two or more counties may agree to establish and maintain a single full-time local health unit. At the present time, Florida has 31 single county health units; six two-county units; five three-county units, one four-county unit, and one five-county unit.

The important thing is that there is full coverage of the state. Although they may vary in programs, each county has a county health department. This system has developed over the years with fine leadership and wide support of medical and dental associations, voluntary health organizations and interested citizens.

Health Units Of, By and For the People

The county health department is a joint venture that calls for the cooperation of the Division of Health and the local elected officials. To paraphrase Abraham Lincoln, a county health department is a governmental agency Of the People, For the People, and By the People.

Under Statute 154, the boards of county commissioners may enter into agreement with the Division of Health for the expenditure of funds—local, state and federal—for the study of causes and prevention of disease. It is the county commissioners' interest and support that makes the system work.

The county health department is responsible to the Department of Health and Rehabilitative Services through the Division of Health for the success of the operations; it is equally responsible to the elected officials and people of the county. Thus as a state representative, the county health department at the local level avoids duplication of services and simultaneously carries out both state and local ordinances.

The county health department always cooperates with other state agencies. It gathers around itself such public health and service agencies as voluntary health organizations and family services, local welfare and vocational rehabilitation units. It assists

- the Bureau of Crippled Children—by furnishing facilities for clinics and providing nursing follow-up of patients;

• the Division of Mental Health—by providing health supervision through home visits by public health nurses to mental health patients and furnishing drugs to those patients who cannot pay for them; and

• Division of Vocational Rehabilitation—by furnishing office space for appointments, plus nursing referrals and follow-up of patients.

What Makes the Florida System Work?

Community cooperation and participation, excellent leadership and state-level supervision are just a few of the things that make the Florida county health department system work. In addition, from Key West to the St. Mary's and Perdido Rivers, there is a county health department in each county. (Even the smallest of the 67 counties has a health unit—even though it may have only a public health nurse and a clerk and share its physician-director and sanitarian with another health unit.) This cannot be said of many other states.

The South was fortunate that the county health unit system was developed there in the 1920's. Although some of the states still have county health units, they are varied and the coverage is insufficient. The Northeastern United States has a diversity of types—some states have a hodge-podge of city, county and district health departments with fragmented authority. Other states have regional or a combination of regional and local units which gives unequal health coverage. The Middle and Far West also have some good local or area public health programs, but again these are spotty and many areas have very little in the way of public health services.

The Florida System Is Flexible

Flexibility is a great asset of the Florida county health department system. Each county can adapt its programs to its local situation—although the system has a regular uniform program and minimum requirements. The local government takes an interest in setting the programs for the county. It may only support programs that are listed as required for each county

health unit or it may expand to programs beyond the minimum requirements.

Sparsely populated counties do not have the same needs as counties with higher density of populations, greater problems, and greater revenues. Orange County one of the fastest growing areas of the nation, has health problems far different than rural Taylor County. The problems that they do have in common are not usually of the same intensity.

The county health department involves the local people in its operation. It welcomes the interested local resident with, "Come on in and let us work out your problems. Help us plan and develop your local program." It is the people's program. They sit on advisory boards and councils that help make decisions about the operations. Although some county health departments receive most of their money from the state, the local health departments belong to the people; public health administration should concern itself with the total health of the community.

A few of the Division of Health's programs are not locally oriented. These include radiological and occupational health programs, licensure of hospitals and nursing homes, and laboratory services.

Boards of county commissioners put money into the county health departments and therefore take an interest—some quite personal—in their county health department. Should the system become state controlled, local people would lose interest in it.

County health departments carry out health planning to study and fulfill the needs of the people. One large Florida county has approximately one-third of its people in the poverty brackets. It has no medical center, no county hospital, no hospital training programs for interns and residents, no medical school, no cooperative program with a medical school. But it must serve those who have needs. Yet the county has an excellent health department which fills these needs through special and generalized clinics and home nursing services.

Not all of the county health departments are of the same quality. Some are superior; some are fair; others could stand improving. Florida has one of the best statewide health systems in the nation. But there are a few bugs in the machinery. How-



DIRECTOR — A county health department director meets with his staff. It is important to the Florida system that he be a physician because he can make medical decisions and relate to the medical and dental factors of the community.

ever, we should not throw out the whole setup because of those parts that need adjusting. A little oil (money, personnel and equipment) will stop the squeaks in the machinery and keep the county health department system going.

Staffing the County Health Department

Leadership has much to do with the quality of the Florida health department system—both at the state and local levels. The continuity in office and the length of service of Dr. Wilson T. Sowder as director of the Division of Health (28 years), and the long terms of service of a number of county health officers have contributed a great deal to the success of the state's system.

The Division of Health maintains an active recruiting campaign to find physicians who meet the requirements of education and experience to fill the positions as county health officers.

The county health officer must be a graduate of an accredited medical school, according to Division of Health policy, and if

he does not have a medical license in Florida, he must secure it within two years after assuming office. Many of Florida's county health officers have their master's degrees or doctorates in public health, and some are certified by the American Board of Preventive Medicine as medical specialists in that field.

Some states are placing non-medical men as administrators of county or district units. It is important to the Florida system to have the county health department team headed by a physician. As the head of the team, he can make medical decisions for the community and relate to the medical and dental societies and health facilities. Because all of the decisions are not medical, he needs a capable public health team to work with him. But a physician-county health officer must be in authority to make epidemiological decisions affecting the community.

Because the financing of the county health department is a cooperative effort, the Division of Health selects and recommends candidates for the position of county health officer to the board of county commissioners. Local officials are the hiring agency of all county health department personnel, but the county health officer is still responsible to the Division of Health for the active operation of the local health unit.

In 1945, the county health departments had 429 employees in 36 counties. In 1964, the number had grown to 1,813 employees, and 1972, there were 3,168. The county health departments now have approximately 135 physicians, nearly 1,000 public health nurses, 465 sanitarians, and 775 clerical workers. In addition, there are 32 dentists, 23 sanitary engineers, 160 laboratory, professional and technical workers, and nearly 600 biologists, nutritionists, health educators, community health workers, dental assistants and hygienists, licensed practical nurses, clinic aides, engineering technicians, social workers, x-ray technicians, mail clerks, mobile unit operators and technicians, stock clerks, custodians, rodent control workers, microbiologists, and laborers.

The Dade County Department of Public Health has over 550 employees; some 16 of the smallest counties have fewer than five employees.

Whereas other governmental agencies usually have only one discipline, the county health departments are multi-disci-

plined agencies. It brings the team approach to the solution of the community's problems. The staff members of the county health departments live in the county by choice. They participate in community activities and are community oriented—from the county health officer right down to the laborer in the unit.

Public Health Nursing

Public health nurses make up the largest number of public health workers in Florida. Their work began in the Sunshine State as an outgrowth of services to tuberculosis patients. Three nurses were hired in 1914 to visit these patients in their homes, but their duties were soon expanded to include other services. Transportation was a problem. The nurses had to put up with belated train schedules, long walks, or long trips by automobile or boat to reach their destinations. According to public health reports, they had to put up with poorly prepared food in out-of-the-way places, uncomfortable sleeping accommodations, and other difficulties to bring health services to Floridians.

World War I cut public health budgets and deleted public health nursing services. However, the concern over good maternity care in the 1920's revived an interest in midwives and their certification. A federal relief program in 1934 saw a new day for Florida's public health nurses. With the organization of local units in the late 1930's, such state-level programs as venereal disease and tuberculosis control, became county health department responsibilities and public health nurses assumed the major responsibilities in bringing these services directly to the local citizens in each county.

Home nursing services have expanded with the advent of Medicare. The role of the public health nurse in the county health department is being extended in other programs as well. She has always been expected to make independent judgments and assume major responsibility for assessment of individual needs. More and more her role is being extended to increase her contribution in providing health screening and primary health care. Today, public health nurses are expected to make health appraisals through

- interviewing and history taking;

TEXT MAY BE LOST DUE TO TIGHT BINDING

County Health Depa

Alachua	Clifford Cole, M.
Bay	A.F. Ullman, M.
Brevard	T. Paul Haney, M.D., Dr.P.
Broward	Paul W. Hughes, M.D., M.P.
Collier	Gunnard J. Antell, M.D., M.P.
Dade	Milton S. Saslaw, M.D., M.P.
Escambia	Harvey G. Tousignant, M.D., M.P.
Flagler	Peter G. Kroll, M.D. (actin
Hernando	John T. Obenschain, M.D., M.P.
Highlands	Glenn V. Hough, M.
Hillsborough	John S. Neill, M.D., M.P.
Indian River	C.C. Flood, M.D., M.P.
Jacksonville-Duval	Edward R. Smith, M.
Lafayette	Richard C. Reynolds, M.D. (actin
Lake	Charles G. Bradley, M.
Lee	Joseph W. Lawrence, M.
Manatee	Sam T. Simpson, M.
Marion	John E. Boysen, M.
Monroe	Myriam Enriquez, M.
Okaloosa	Joan M. Altekruse, M.
Orange	Wilfred N. Sisk, M.D., M.P.
Osceola	John Ficicchy, Jr., M.

• care observation of physical, mental, emotional and developmental conditions of patient; and

• certain screening tests, instruments and laboratory procedures.

Some public health nurses are receiving special preparation in such areas as maternity care, midwifery, family planning, pediatrics, and geriatrics.

The public health nurses are "general practitioners" who need the flexibility of the county health department system. They can provide better service for more people when the services can be adapted to the individual's needs. The county health department's policies are not so rigid that a matter of a few dollars in income can mean the denial of services to a needy person.

s and Their Directors

Palm Beach	C.L. Brumback, M.D., M.P.H.
Pinellas	George M. Dame, M.D.
Polk	W.F. Hill, Jr., M.D., M.P.H.
Putnam	E. Henry King, M.D., M.P.H.
St. Johns	Mason Morris, Jr., M.D.
Santa Rosa	Arthur E. Harbeson, M.D.
Sarasota	John F. McGarry, M.D.
Seminole	Julian J. Fried, M.D.
Volusia	Hubert U. King, M.D.
Baker-Nassau	Asa Barnes, M.D.
Citrus-Levy	R.E. Dodge, M.D., M.P.H.
Gadsden-Jackson	Howard G. Kreiger, M.D.
Glades-Hendry	J. Dillard Workman, M.D., M.P.H. (acting)
Madison-Taylor	Joseph P. Coco, M.D.
Pasco-Sumter	Herrick M. Thomas, M.D.
Bradford-Clay-Union	Peter G. Kroll, M.D. (acting)
Charlotte-DeSoto-Hardee	Francis R. Myers, M.D.
Holmes-Walton-Washington	W.G. Simpson, M.D., M.P.H.
Jefferson-Leon-Wakulla	B.E. Bennison, M.D., M.P.H.
Martin-Okeechobee-St. Lucie	Neill D. Miller, M.D.
Calhoun-Franklin-Gulf-Liberty	W.T. Weathington, M.D., M.P.H.
Columbia-Dixie-Gilchrist-Hamilton-Suwannee	F. Barton Wells, M.D.

The Professional Sanitarian

In public health, one professional that has been found almost exclusively in the county health department is the sanitarian. Although the first seeds of environmental control were sown shortly after the turn of the century through attempts to combat communicable diseases, the first sanitary engineer was added to the old State Board of Health staff in 1916. He was to survey the health situation in Florida. From that small beginning, sanitarians and sanitary engineers became a force to educate the people of Florida in the prevention of mosquito breeding, safe water, malaria and pollution control, and the solution of many other health problems.

When the county health departments were formed, the work previously carried on by the State Board of Health became the responsibility of the sanitarians at the local level.



SANITARIAN — This professional sanitarian knows what to do about this unhealthy situation found in a migrant camp. His training makes him capable of solving many types of environmental health problems.

For the improvement of rural and urban sanitation, inspections were required. Likewise, in malaria control programs, intelligent, informed males were needed. The county health departments required a new type of public health worker for these and related needs in environmental sanitation. This body of workers has grown in numbers until now it totals 465 sanitarians. But it is no longer a man's field; more and more women are joining this group of professional workers.

Today's professional sanitarians are college graduates with training in the biological sciences. Senior members of the profession have graduate training in public health. Their responsibilities include the handling of environmental problems which do not require the immediate use of medical or engineering skills. They respond to many urgent calls from citizens—everything from a "mad dog" to malfunctioning septic tank, food-borne disease outbreaks, or any conditions which have public health significance and are of major concern to the citizens involved.

Every Florida county is covered by a new kind of environmental specialist. This is the certified food hygiene program coordinator who is trained to upgrade the sanitation levels of Florida's food service establishments. Through better inspection of food and milk products, the food service monitoring has never been better.

One environmental section chief said that the public has come to believe that the county health department can correct anything immediately or overnight. The sanitarians try to respond to public demands as quickly as they can.

The county health departments of Florida are oriented to prevention and not given to crisis—although many times crises arise because of the failure of Floridians to respond to environmental corrections suggested by the county health departments. The county health departments, in many instances, insist on a higher factor of safety than the public or legislature expects.

The Clerical Staff

The clerical staff is as important as the other county health department personnel. The clerk is the public health worker most of the public meet first, either by telephone or in the office. Forty-seven of Florida's county health departments have five clerks or less. However, the Dade County Department of Public Health has some 150 clerical workers. Seven others have more than 25.

In the smaller counties, the clerks act as receptionists, secretaries, telephone operators, file clerks, budget watchers. They keep vital statistics and financial records, and carry on many duties of the specialists in the larger county health departments. Sometimes, such programs as Medicare, maternal and infant care, environmental surveys generate mountains of paper work; much of the administrative work is required by the clerical staff because in the smaller counties there are so few people to do the work.

In the larger counties, the clerical staffs have specialized duties. They work in vital statistics, tuberculosis, venereal disease control, on the switchboard, and in the reception area, as private secretaries, or administrative assistants.

Activities To Protect Your Health

The Florida county health department system is flexible and permits any combination of programs to serve the community. The system makes the most of state and local control. It gives



CLERICAL STAFF — Keeping vital statistics records is just one of the duties of the county health department clerk. In small counties, all of the work is done by one or more clerks; in large counties, there are many clerical specialists.

---

the county health departments the opportunity to be responsive to the needs of the people.

The county health department can use the money in the County Health Unit Trust Fund to hire the personnel to expand its local program—as long as minimum program standards are met and the money is available and spent according to the state's purchasing regulations. This flexible system would be hampered by long-distance administration; and opportunities for local people to handle their own problems, as they arise, would be restricted.

Some people see the flexibility as a shortcoming, saying that the county health departments lack uniformity in providing services. But the problems and situations arising in Dade County, for example, are not the same as those in Dixie County; and those in Orange County are not the same as those in Holmes County. Each county needs to be able to adapt its money and personnel to the needs of its people. Palm Beach has some 40,000 seasonal farm workers who need health services. Other counties

have this problem to some degree; but many Florida counties are not faced with the problems presented by migrant farm workers.

Personal Services of the County Health Department

One of the major aspects of the county health department's activities is prevention of disease—this includes communicable diseases. Public health nurses, during 1972, had over 270,000 office and clinical conferences with patients involving communicable diseases, venereal disease and tuberculosis control. In addition, they made over 79,500 home visits to patients and families with such diseases.

They also made over

- 186,000 home visits and had some 405,000 office conferences involving mothers and children;
- 140,000 field visits and had 84,560 office visits to patients concerning cancer, diabetes, cardiovascular and other chronic diseases;
- 20,450 field visits and had 31,400 office visits concerning mentally-ill patients; and
- 14,300 home visits, and had 41,500 office visits for other illnesses.

County health department staff members in 1972

- made 5,862 visits to patients in nursing homes;
- performed over 1,445,000 general medical examinations;
- issued 334,297 health cards; and
- made 5,121 home visits to people involved in accidents or poisonings.

County health department physicians and public health nurses

- treated parasites, venereal disease and tuberculosis;
- immunized for smallpox, diphtheria, whooping cough,

tetanus, poliomyelitis, typhoid, rabies, German measles (rubella) and red measles (rubeola);

• gave maternity services, antepartum and postpartum examinations, supervision of "granny" midwives, and family planning services to mothers;

• conducted well baby and child clinics, conducted school health services, hearing and vision screenings, and served on school committees that supervised the health services of school-children. Public health nurses had over 112,500 conferences with school teachers and principals.

Dentists in county health department clinics made over 32,200 dental inspections of children, indigent maternity patients and other persons; and admitted 62,807 persons for treatment. A total of 66,335 fillings was inserted, over 38,000 teeth were extracted, and 13,679 topical fluoride applications were made.

Chronic disease screenings by the county health departments included cancer, cervical cancer, diabetes, cardiovascular diseases, glaucoma, and other chronic diseases.

Other services carried out by the county health department staff members included:

• follow-up of patients relased from state hospitals;



PUBLIC HEALTH NURSE — The public health nurse has many activities. This nurse (under painting) serves on a school committee that identifies and assists children with their problems. She is especially concerned with their health needs.

- general medical examinations;
- issuing of health cards;
- recording vital statistics;
- assisting with Civil Defense;
- accident prevention; and
- visits to nursing homes for inspections and visits to patients.

Environmental Services

Environmental services are similar in all of the county health departments. The difference is that in the smaller units, one sanitarian supervises the health aspects of eating establishments, grocery and meat markets, schools, sewage and water systems, dairy farms and housing. It is a more demanding job and involves much flexibility of time, scheduling and programs.

The larger county health departments have sanitarians who specialize in

- inspection of dairies and milk processing plants;
- shellfish and crustacea;
- food hygiene
- inspection of nursing homes, schools, child care centers, homes for the aged, and public and private buildings.

These larger counties also have sanitarian aides who make preliminary inspections of sanitary nuisances and report back to the registered sanitarians—who make the final judgements on handling of the problems.

In 1972, sanitarians made over 883,000 visits to private and public sewerage systems, public and private water works, public swimming pools and bathing places, schools, mobile home parks, camps, tourist courts and motels, child care centers, dairy farms and milk plants, food establishments, and public and private premises.

Environmental services of the county health departments to the people included:

- testing of public water systems, private wells and bottle water plants;
- supervision of ambulances and emergency medical services;
- supervision of garbage disposal;
- taking of percolation and soil testing;
- surveys of bathing areas, testing of public swimming pools;
- inspection of schools, mobile home parks, camps, tourist camps, motels, child care centers.
- investigation of nusiance and plumbing complaints;
- inspection of food and drinking establishments, food processing plants, abattoirs, shellfish and crustacea plants, groceries and meat markets;
- instruction of food service workers (over 9,700 in 1972);
- inspection of dairy farms, milk producing plants and supervision of testing cows for Bang's disease and tuberculosis;
- inspection of private and public premises; and
- checking stores and markets for unsafe products.

Emphasis on New Programs

Since 1931, the county health department system has continued to expand and meet the needs of the changing times. Flexibility of the county health departments allows for innovation and experimentation to meet the needs of a growing population and new problems. Some programs fail because of the lack of money or the community was not ready for the advanced services. For example, one county health department planned a program of health guides who would work with low socioeconomic groups. However, the program was dropped because of the lapse of funds.



DENTIST — One of the specialists who works in the county health department is the dentist. Those in county health department dental clinics made over 32,200 inspections in 1972.

But many times new ideas and knowledge emerge from these failures. A manual was developed by the health guide program which became a valuable tool for the teaching of clinic aides.

Prevention is still the major thing in the county health departments. But primary health care, in the guise of such programs as Medicare, Medicaid, family planning—all with large amounts of federal money, have changed the nature of the total program of the county health department.

Because of the many needs of the lower socioeconomic groups, an overloaded and understaffed private sector of the medical profession cannot address itself to the medical care of indigents. Therefore, the county health departments are pushed into primary health care. This is a trend of the times and it may well increase in the future—especially if a national health insurance plan comes out of the U. S. Congress.

Public Health Takes Money

Like everything else in life, money makes the wheels of public health turn. Financing is a cooperative effort of the Florida Legislature and the Boards of County Commissioners. County and state participation in the funding of the county health departments varies considerably among the different counties. County contributions to the county health units vary from approximately

10 per cent to 50 per cent of total expenditures and bear little relation to the size of the county.

The state monies, along with local tax funds and any federal monies the county health department may receive, are placed in the County Health Unit Trust Fund. The director of the county health department, in consultation with the board of county commissioners and local people, designs a budget with programs to fit the county. This budget must be approved by the Division of Health. Actual spending of the money is subject only to state fiscal regulations and whatever federal rules are applicable.

County health departments may collect fees for service given. Some units charge for home nursing care (according to the ability of the patient to pay), health cards, birth and death certificates, premarital tests, well permits, percolation tests, child care center permits, and several other services. A schedule of fees is established by the boards of county commissioners and filed with the Division of Health. All funds collected are expended for providing health services and facilities of the county health department.

Over the years there has been a progressive expansion of Florida's county health department system. One measure of growth is the expanding cost of public health. In 1935, funds expended for local services from local, state and federal sources, totaled $30,970. In 1952, the amount had increased to $2.4 million, and in 1965, it had reached $11.3 million.

Approximately $25.5 million was disbursed through the County Health Unit Trust Fund in 1972. While most of the services provided by the county health departments were financed through the trust fund, a large portion of the services were financed through special federal project grants. These grants in 1972 totaled $11.8 million. Special projects included maternal and infant care, child and youth health services, tuberculosis control, migrant health, family planning, immunizations and venereal disease control.

Additional funds for health services can come through the assignment of personnel. For example, salaries of public health nurses to assist in the nursing care of the sick at home may be provided through third party payments (Blue Cross, Medicaid) and be from state or federal funds. Laboratory services, much of sanitary engineering services, consultative services, accredited training stipends, and biologicals (drugs) are made available to

the county health departments through the support of state-level monies.

Florida's county health department system is the most comprehensive and has one of the best reputations in the nation. It is the best type for getting federal grants; and Florida, on the average, has as many or more federal public health grants then most other states.

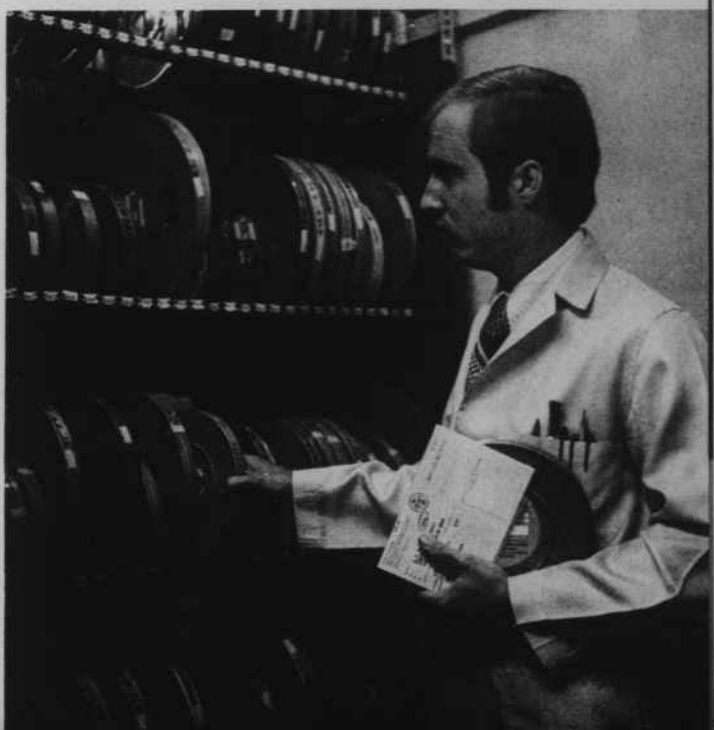
Ties to the Division of Health

Throughout this issue of **Florida Health Notes** we have mentioned that the county health departments are responsible to the Division of Health for its daily operations, budget approval—overall supervision—even though the unit is a cooperative effort of the state agency and the boards of county commissioners.

The county health departments also have available from the Division of Health such services as

- educational tools—the central audio-visual, medical and public health libraries, publications, pamphlets and **Florida Health Notes;**

- consultative services in many areas of public health, including nursing, sanitation, engineering, radiological health,



ADDITIONAL SERVICES — One of the supportive services provided to the county health departments by the Division of Health is the audio-visual library. Other services include laboratories, training, medical and public health library, and a variety of consultative services.

entomology, epidemiology, vital statistics, chronic diseases, and many others;

- laboratory services for diagnostic purposes;

- stimulation and assistance in the evaluation of the county health department's own services to the community; and

- a training program second to none—consisting of post-graduate, inservice and short term training for county health department personnel. Public health is a highly technical field, requiring its own special background; and to meet the need, the Florida system has been training people for over 30 years.

Society's Watchman for Health

There is no substitute for the county health departments as the base of public health in Florida.

The local health departments' trained public health workers are in each county, in nearly every community, protecting your health from the outbreak of disease, prolonging your life, and making your days more comfortable.

These are the only purposes of the county health departments. They go about their work quietly, efficiently responding to your needs. They are your watchmen, protecting your health—even-though you may not be aware of it. This is the story of YOUR county health department.

Speaking before the 1964 educational conference of the Florida Public Health Association, Dr. Wilson T. Sowder, director of the Division of Health, said, "These health departments furnish community health services in possibly the widest variety and broadest spectrum to be found in the entire country. From the standpoint of community organization and statewide coordination, large areas of the country have nothing approaching it. In the organization of overall community health, Florida is well ahead and is well prepared to undertake new responsibilities."

entomology, epidemiology, vital statistics, chronic diseases, and many others;

- laboratory services for diagnostic purposes;

- stimulation and assistance in the evaluation of the county health department's own services to the community; and

- a training program second to none—consisting of post-graduate, inservice and short term training for county health department personnel. Public health is a highly technical field, requiring its own special background; and to meet the need, the Florida system has been training people for over 30 years.

Society's Watchman for Health

There is no substitute for the county health departments as the base of public health in Florida.

The local health departments' trained public health workers are in each county, in nearly every community, protecting your health from the outbreak of disease, prolonging your life, and making your days more comfortable.

These are the only purposes of the county health departments. They go about their work quietly, efficiently responding to your needs. They are your watchmen, protecting your health—even-though you may not be aware of it. This is the story of YOUR county health department.

Speaking before the 1964 educational conference of the Florida Public Health Association, Dr. Wilson T. Sowder, director of the Division of Health, said, "These health departments furnish community health services in possibly the widest variety and broadest spectrum to be found in the entire country. From the standpoint of community organization and statewide coordination, large areas of the country have nothing approaching it. In the organization of overall community health, Florida is well ahead and is well prepared to undertake new responsibilities."

US-ISSN-0015-4105

FLORIDA HEALTH NOTES

VOLUME 65 — NO. 8

AUGUST 1973



Infectious - Serum HEPATITIS



CAMP JAUNDICE— Hepatitis has reached tremendous proportions among troop concentrations over the centuries, including all of the wars in which the United States has been involved.

Infectious - Serum HEPATITIS

John H. did not feel well. For a week he felt as though he were coming down with the flu—that nondescript, ill-defined illness one suffers so often. He had no appetite, a stomachache, nausea, fatigue. As he looked into the bathroom mirror, he noticed that the whites of his eyes were slightly yellowed. He took a closer look at himself.

"Something's wrong," he muttered, "I'd better go see Doc Wilson."

John did not know he had infectious hepatitis; but his physician was soon to tell him that he had the disease.

When questioned by his physician, who told him hepatitis was spread through the feces of persons with the disease, John could not recall where he might have acquired hepatitis. What he was not able to remember was the party he had attended a few weeks before. And it was impossible for him to know that the drinks served had been contaminated by the host.

* * * * * * *

Jerry J. wasn't feeling well when he and his wife had given that party for the newly-engaged couple. He had been nauseated, had stomach cramps, felt tired, suffered from diarrhea. He knew he was coming down with a "virus." Just as the guests were arriving, he had to visit the bathroom (and in his haste, he had failed to wash his hands thoroughly. He had then made and served the drinks; unwittingly he had put the ice into the glasses with his hands.

Jerry recovered from his illness a week later. He did not visit his physician and so he did not know that he had hepatitis.

SAFETY PRECAUTION (Cover photo)—Good personal hygiene practice is one way of preventing the spread of hepatitis. Washing your hands with soap and water after using the bathroom and before preparing, cooking and eating food is important in its control.

And he certainly did not know where he had acquired the disease.

Jerry did not connect his week-long illness to something he had eaten. He did not connect this with his purchase of some glazed doughnuts at a local church bake sale several weeks earlier. He was the only one in the family who had eaten the doughnuts which had been contaminated by the woman who had baked them. It had been four weeks between the time he had eaten the glazed doughnuts and the time he became sick.

* * * * * * *

This is a hypothetical chain of events which shows how two persons became infected with viral hepatitis. But it could happen to you.

What is viral hepatitis?

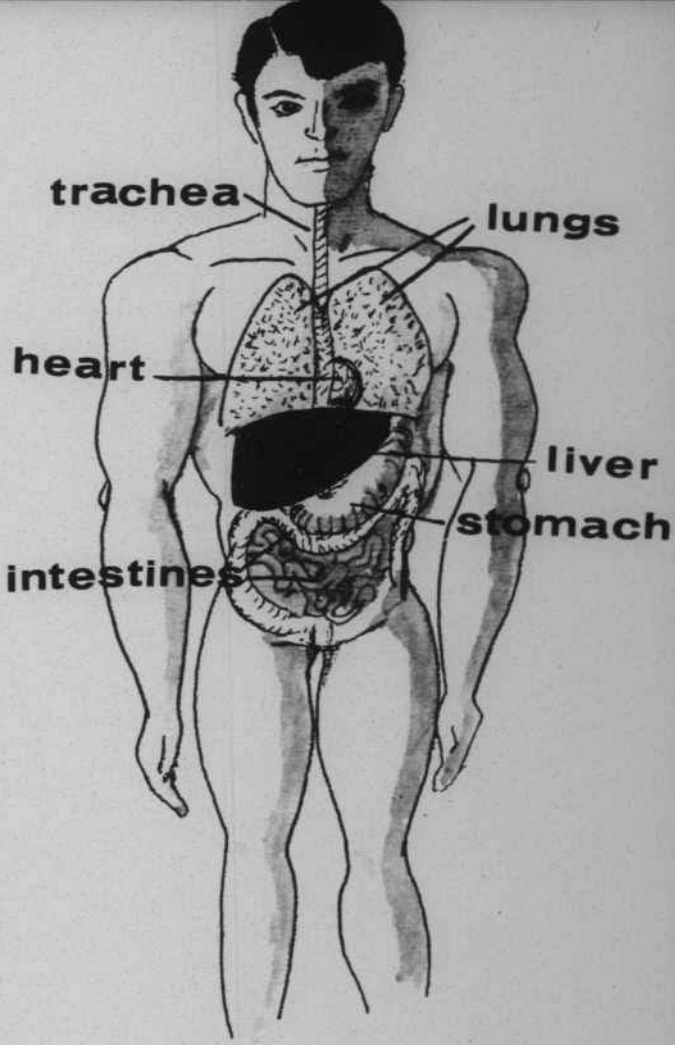
Viral hepatitis is a disease that involves the liver. There are two known kinds—infectious and serum—but we'll go into the differences later.

Hepatitis is a disease that is reportable by physicians and county health departments to the Division of Health of the Department of Health and Rehabilitative Services. It is one of the most frequently reported diseases that is non-childhood, non-cyclic, and non-venereal. There were some 2,500 reported cases of infectious hepatitis and 396 cases of serum hepatitis in Florida in 1972. But because the disease is not a serious one—unless there are complications—most people recover. However, there were 43 deaths reported from infectious hepatitis in Florida last year; and 14 deaths in which serum hepatitis was mentioned on the death certificates as a contributing factor.

FLORIDA HEALTH NOTES

Published monthly by the Division of Health (Wilson T. Sowder, M.D., M.P.H., Director) of the Florida Department of Health and Rehabilitative Services. Publication office, Box 210, Jacksonville, Florida 32201. Second Class Postage paid at Jacksonville, Florida. Printed since 1892, this publication is for individuals and institutions with an interest in the state's health program. Permission is given to quote any story providing credit is given to the Division of Health. Editor: Robert A. Schoonover, M.A.
Post Office Form 3579 should be mailed to Box 210, Jacksonville, Fla. 32201

VOLUME 65, NO. 8 **AUGUST, 1973**



THE LIVER—Largest organ inside the body, the liver is located just below the lungs and heart. In adults it weighs three to four pounds.

This issue of **Florida Health Notes** will discuss the two kinds of hepatitis, tell you how the diseases have affected people down through the centuries; about the symptoms, complications and treatment of the disease, and what the Division of Health is doing to limit the spread of the disease to other people.

The Liver - You Cannot Live Without It

The liver is not only the largest organ in the body; it has a large number of functions that are important to your well-being. It is essential to your continued existence.

The liver is found in the right side of the abdomen just beneath the diaphragm. In adults it weighs three to four pounds,

is one to three inches thick, and measures 12 inches long (front to back) and seven inches wide.

The blood draining from the gastrointestinal tract (stomach and intestines) contains absorbable products of digestion. This blood must pass through the liver before entering the general circulation and it is here where many of the foods are made suitable for the body. The pancreas is also an organ included in the process of breaking down foods.

The functions of the liver are very important. It is concerned with carbohydrate metabolism; it stores sugar (glycogen), certain fats and vitamins; excretes ammonia and bile necessary for digestive purposes; and detoxifies the amino acids of proteins.

The liver does a remarkable job of restoring its functions when afflicted. Even when all but a small portion of it must be removed, the liver is able to carry on its functions.

Two Types of Hepatitis

Viral hepatitis is a disease caused by two or more different kinds of viruses. One kind is the infectious hepatitis—usually spread by the fecal-oral route of contaminated foods and water or direct contact; the other is serum hepatitis—classically transmitted by transfusions of whole blood, injections or ingestion of blood serum or plasma from infected persons, and accidental contamination of syringes or needles with traces of blood or feces.

The type spread by food and water has been called viral hepatitis, infectious jaundice, epidemic hepatitis, acute yellow atrophy of the liver, catarrhal jaundice. For the purpose of this issue of **Florida Health Notes**, we will call this type "infectious hepatitis."

"Serum hepatitis" has been called post-vaccinal, vaccinal jaundice, homologous serum jaundice, inoculation hepatitis, transfusion hepatitis, "junkie jaundice."

Only as recently as the 1940's, these two types of hepatitis were listed in medical journals under "liver, inflammation of." Today, the World Health Organization's Expert Committee on Hepatitis has standardized the terminology. It recommends that

the naturally occurring form of the disease be called "infectious hepatitis" and the artificially-transmitted form be called "serum hepatitis."

The virus will pass through bacteria-retaining filters, survive heat of 133 degrees Fahrenheit for at least 60 minutes, and remain active for several years in frozen materials. One specimen of virus in dried yellow fever vaccine was active after being stored for one year at room temperature. It has survived for months in sera and is more resistant to chlorine than many of the bacteriological pathogens commonly encountered in water.

Infectious Hepatitis

Little is known about the virus that causes infectious hepatitis. There is no known non-human host. The virus has not been grown in tissue cultures.



A SOURCE OF POSSIBLE INFECTION—A sanitarian takes a sample of water to check a water supply for possible hepatitis. Although some 2,500 cases of hepatitis were reported in Florida in 1972, there were no apparent common sources of infection.

Although the agent has never been isolated, infectious hepatitis is a prevalent disease that is world-wide in distribution and frequently occurs in epidemic form. Most of the nearly 2,500 cases that were reported in Florida in 1972 were individual cases with no apparent common source of infection. The attack rate in the United States varies from 10 to 81 cases per 100,000 population.

When infectious hepatitis is occurring in a community, the water supply, sewerage system, food and shellfish are usually the first things suspected; but rarely are they proven to be the cause of the outbreaks. One woman with infectious hepatitis can spread it throughout the community. Mrs. C. was not feeling well, but she had promised to make 200 glazed doughnuts for her church's bake sale. In the process of making the glaze, she accidently contaminated it with hepatitis viruses (which she did not know she had). Two to six weeks later, persons who had eaten the doughnuts (including Jerry J. earlier in our story) came down with infectious hepatitis. The church would have been better off if it had purchased the doughnuts from a commercial bakery. There would have been far less chance of disease.

In most cases of infectious hepatitis, the source is rarely known. But it can be said that common source epidemics are caused by contaminated food or water. These are usually explosive and short-lived. This much is known: The disease is spread through contact with fecal material of an infected person.

A dramatic epidemic occurred in New Delhi, India, in 1957, apparently caused by contamination of the municipal water supply by raw sewage. Over 50,000 cases of hepatitis with jaundice occurred within a two-month period.

In 1972, there was a small outbreak among children of a Florida child day care center. Despite efforts to locate a common cause, the source of the infection was never found, although person-to-person transmission was documented.

A trailer park in South Florida a few years ago experienced 10 cases. It was believed to have been caused by a malfunctioning water system but the source of the infection remained a mystery. It could have been caused by a cross connection of the water and sewerage systems. When the water pressure dropped, the

sewage could have flowed back into the water pipes. Or a malfunctioning septic tank could have overflowed into the water table because of heavy rains.

Serum Hepatitis

While infectious hepatitis is usually transmitted from one person to another by fecal-oral means, serum hepatitis is most easily transmitted through blood or plasma transfusions, or by contaminated needles or syringes. Other suspected means of transmission are urine, renal dialysis, saliva, and sexual intercourse. Because the blood has been a frequent source of serum hepatitis, great care is routinely taken in sterilization procedures in hospitals and physicians' offices. In many instances disposable syringes and needles have replaced other equipment to decrease the risk of infection.

Serum hepatitis can also be passed by the mother to her newborn baby at the time of delivery. The infection can come from the blood in the birth canal, as well as through the placenta, the vascular organ in the uterus through which the baby is nourished during development.

A small epidemic of serum hepatitis was reported recently in Florida involving a private plasma laboratory. Investigations by the Division of Health epidemiologists began after nine persons became ill after giving plasma, and revealed that the disease was probably transmitted orally by thermometers from a person who was infected. The thermometers were probably inadequately cleaned after each using. Before the investigations were completed 20 persons were known to have been infected.

Serum hepatitis has two factors that distinguish it from infectious hepatitis. The first is that serum hepatitis takes several months before the first symptoms appear (more will be said about this later); and second, a hepatitis-associated antigen appears in the blood. This may be the serum hepatitis virus itself.

An antigen is a protein or carbohydrate substance (such as toxin, enzyme or bacteria) that when introduced into the body stimulates the production of antibodies. Antibodies, in turn, are produced by the body to fight any invading virus or toxin.



SERUM HEPATITIS—Because serum hepatitis is transmitted through blood or plasma, blood banks are extremely careful in checking blood donors and in sterilizing equipment.

The hepatitis antigen was discovered in 1963 at the time a study of the blood proteins of an Australian aborigine was being carried out. This opened a completely new chapter in hepatitis research. Through well-documented studies, the antigen was found in most patients who had long-incubation hepatitis (45 to 160 days), but it was not present in patients with short-incubation hepatitis. This is one sign of serum hepatitis—regardless of the source of the disease.

The Australian antigen test is made to diagnose hepatitis, but it is only good for serum hepatitis and even then it is positive in only about 50 per cent of the cases.

Studies in Miami have shown that 11 per cent of the drug addicts there are positive for the Australian antigen, and it is possible for them to pass the antigen on to someone else through infected needles. Seventy-five per cent of the drug addicts have antibodies, indicating that they have had serum hepatitis in the past.

Hepatitis and People

During recent years, infectious and serum hepatitis have presented problems of such proportions to people—involving armies and community health—that practically all nations have demanded that hepatitis be recognized as one of the important medical problems of the day.

The ancient Greeks described jaundice in the epidemic form some 2,000 years ago. This was probably infectious hepatitis. The disease was mentioned in the writings of a Greek physician of the Hippocrates School, which places its earliest recorded occurrence about 2nd Century, B.C.

Since the 17th Century, there have been numerous reports of jaundice in various populations. During wartime, particularly, the disease reached tremendous proportions among troop concentrations. Armies involved in the Napoleonic Wars, the American Civil War, the Franco-Prussian War, the South African War, both World Wars, and the Korean and Vietnam conflicts were severely affected. Hepatitis among the military became know as "field jaundice" or "camp jaundice." During World War II, it was a major medical problem among American troops. Some 50,000



cases of jaundice appeared among American military personnel who had received yellow fever vaccine.

Although modern army barracks are kept as clean as possible, the close contact between the men sharing common latrines presents a problem in the control of hepatitis. Field maneuvers and battles present even more of a problem because even primitive sanitation breaks down and hepatitis spreads.

People crowded together carry increased risk for acquiring hepatitis. Institutions for the mentally retarded frequently have outbreaks of the disease. It is a matter of breakdown of good personal hygiene practices and close contact with other persons. According to the American Public Health Association, outbreaks of hepatitis are more common in rural areas than urban. This is possibly because of poorer sanitary facilities.

MAJOR MEDICAL PROBLEM—During World War II, hepatitis was a major medical problem. Some 50,000 cases of jaundice appeared among American military personnel who received yellow fever vaccine.



It has been known for years that certain groups of people are more likely to contract hepatitis than the general population. These groups include obstetricians, surgeons, laboratory technicians, renal dialysis personnel and nurses.

One study of dentists and attorneys conducted by an epidemiologist in the Dade County Department of Public Health revealed that dentists were more likely to contract hepatitis than attorneys. The two groups were mostly males, and of similar socioeconomic levels, ages and status. The dentists had a rate of 6.3 per cent who had hepatitis; the attorneys had a rate of 2.4 per cent.

Most of the cases involving the attorneys were associated with surgery, blood transfusions, food, shellfish, families, or travel. Among the dentists, few such histories occurred. They indicated that they had probably received the disease from close contact with their patients' blood and saliva.

Symptoms of Hepatitis

Like John and Jerry, at the beginning of our story, a person with hepatitis may think that he has the flu or some other type of non-descript illness.

Infectious hepatitis symptoms will show up two to six weeks after the person contracts the virus. This is short incubation hepatitis. The disease may occur as an isolated case or as an epidemic where it may affect large portions of the population.

There is usually a period ranging from several days to two weeks when the patient suffers low grade fever, fatigue, malaise, stomach pains, or gastrointestinal discomforts, nausea, and loss of appetite. He may lose his taste for cigarettes.

Then the jaundice gradually appears. This will last from one to three weeks. During this time the urine is dark and the stools light-colored, indicating the absence of bile in the digestive tract. The whites of the eyes and skin begin to turn yellow. The patient's liver is sensitive and tender to the touch.

The disease will run its course in three to four weeks and the patient will begin to improve—unless there are complications.

The patient will feel bad for about seven to 21 days.

The symptoms for serum hepatitis are much the same as those of infectious hepatitis—except for the longer incubation period of from 60 to 160 days. The presence of Australian antigen is the best way to distinguish serum hepatitis from infectious hepatitis—and even then the test is only 50 per cent reliable.

There is little or no fever with serum hepatitis. The patient may complain of swollen knees and elbows and he may develop hives (rash) with intense itching.

Most cases of hepatitis are recognized in persons 15 to 30 years of age. Children get the disease but because jaundice usually will not appear in youngsters, hepatitis is not easily recognized without blood tests. Older persons seem to be less affected than younger people. During an epidemic, the development of fatigue, loss of appetite, low grade fever in children—with

---

TAKE IT EASY—A person with hepatitis should not become overly tired or fatigued during his illness. Bed rest and a proper diet are the best means of treating hepatitis.



or without jaundice—should lead to consideration of infectious hepatitis as a diagnosis.

There has been a change in the hepatitis picture over the years. In the past the number of cases would reach a peak every seven to eight years. And there were also more cases in the summer than in the winter months. Since 1963, however, there seems to be a more gradual increase in the number of cases; the summer peaks seem to have been eliminated.

Perhaps this is due to the change in living patterns. More people are eating their meals away from home where they suffer a greater chance of exposure to the disease. There is little that can be done to assure that the waiter who serves up food at the corner hamburger stand does not have a case of hepatitis. And perhaps now there is better reporting of the disease by physicians.

The principal disease from which infectious hepatitis should be distinguished because of the difference in treatment—are Weil's disease, relapsing fever, and yellow fever. If you are ill, you should see your physician—no matter what the disease may be. There is also obstruction of the bile ducts by stones or tumors, and inflammation of the liver due to drugs or anesthetics.

Complications of Hepatitis

Infectious hepatitis can be an overwhelming disease. Its progress is very rapid once it starts. But the chances that you will develop serious complications are rare—perhaps one out of a hundred.

Some of the complications are:

* recurring acute hepatitis with the liver remaining inflammed for years after the initial illness. Some people will not get sick again; others will develop progressive hepatitis and ultimately the liver is destroyed.

* acute liver atrophy—a degenerative process accompanied by the serious loss of liver function. A high fever is common; gastrointestinal symptoms and jaundice are early signs. There may be spasms of the extremities, unconsciousness and coma, followed by death. The general outlook is unfavorable and the patient may succumb in a few days or weeks.

* hepatic coma involves the liver, nervous system, brain and spinal cord. The patient will become progressively worse until he dies; or he may get well.

* bleeding may develop due to the lack of the production of some bloodclotting products made in the liver.

* bacterial or fungal infections superimposed on hepatitis.

Treatment of Hepatitis

There is no specific antibiotic available to combat hepatitis; there are no vaccines to prevent you from getting it. The medicines used are to make you comfortable—not to cure the disease.

The major problem in managing infectious hepatitis is limiting its spread to other people. But unless they become jaundiced, many people do not realize they have the disease. Only about three out of 10 persons develop jaundice. Early symptoms are vague and the disease is difficult to recognize during its early stages. Therefore people frequently do not know they have the disease and fail to take the necessary precautions to prevent its spread.

One way of limiting the spread of infectious hepatitis is to hospitalize the patient where appropriate isolation and medical attention can be given. But this is expensive. It is not medically necessary because the rest of the household and the patient's personal contacts are already exposed. Unlike some communicable diseases—which are transmitted by droplets sprayed from the mouth and nose, hepatitis is not easily transmitted to casual contacts of the patient.

Gamma globulin—a serum with antibodies—may be given to those of the household who are exposed to infectious hepatitis. This will not prevent them from getting the disease but it can lessen its severity. If a person becomes infected after having received gamma globulin, he will most likely develop a mild illness. He will also have lifelong immunity. Gamma globulin is sometimes used to control outbreaks among young children and institutionalized adults where breakdowns in personal hygiene



DIET FOR HEPATITIS—A diet for the hepatitis patient should be high in protein and carbohydrates and low in fats. Hard candy may also be suggested as it will help the liver restore itself.

---

practices are known to be common. It is valuable, too, in decreasing the risk for severe illness in travelers exposed to hepatitis in known endemic areas of the world.

Ordinary gamma globulin is only good for infectious hepatitis. It has no effect on persons with serum hepatitis.

The best way of limiting the spread of infections from recognized patients and contacts is to emphasize personal cleanliness and the safe disposal of feces and urine.

Rest and diet serve as the best medicine for persons with hepatitis. At one time strict bed rest was considered necessary,

but now public health physicians believe (because of a U.S. Armed Forces study) that the patient should rest in bed only during the acute attack and even then he should be given toilet privileges—if he is capable of it.

When the patient is symptom-free and the acute illness is over, he is started on the road to recovery. If his jaundice is clearing and his liver is no longer tender, if the patient feels well and is able to carry on normal activities, he should be allowed to do so. The one thing that the patient should not do is become overly tired or fatigued during the first five or six weeks after getting sick.

A well-balanced diet is important. This should be high in protein and carbohydrates. High protein foods are milk (all forms) yogurt, cheese, eggs, beef, lamb, lean pork, liver, chicken, turkey and fish. High carbohydrate foods are breads, cereals, rice, macaroni, spaghetti, potatoes, sweetened fruits, fruit juices, and desserts. Hard candy frequently tastes good to persons with hepatitis and it may be very useful in nourishing the liver.

A patient should eat as much as he can hold comfortably of whatever appeals to his appetite. It is important that he eat adequately, but not beyond his capacity.

Other safety precautions to keep from spreading hepatitis include:

* wash hands with soap and water after using the bathroom;

* keep fingernails clean;

* flush toilet immediately after using;

* use a separate bathroom (if available). The patient's wash cloth, towels, and soap should be kept separate from those of other family members;

* wash hands well with soap and water before cooking, eating or preparing foods;

* wash and keep patient's dishes, glasses and silverware separate from those used by other household members;



EXTRA PRECAUTION—A patient's dishes, glasses and silverware should be kept separate from those of other household members. The dishes should be washed thoroughly and sterilized with boiling water.

---

* wrap and throw in the garbage pail any food the patient does not eat;

* avoid close contact with other people during the period of infection (such as handling young children and having sexual intercourse); and

* check with your family physician before taking any medication.

Public Health and Hepatitis

Hepatitis is of public health concern because the disease occurs frequently in common source epidemics and can be spread through commercial institutions (such as restaurants), because the

number of cases reported each year is large, and because of the debilitating effects of the disease. Therefore, the Division of Health and county health departments are concerned with preventing any outbreaks. The nearly 2,500 cases in Florida last year were sporadically spread throughout the state.

The Division of Health staff members who are involved in the control of hepatitis include:

* the epidemiologist, who confirms that the patient has hepatitis, investigates (by talking to the patient) the source of infection—water, food, blood or blood by-products; and determines the type of infection—whether it is serum or infectious hepatitis.

* the public health nurse, who is involved in the follow-up of the case of hepatitis, educating the family in proper hygiene and the care of the patient. This is to avoid the spread of the disease to other members of the family and the community.

* the sanitarian and sanitary engineer who investigate the sanitation of the environment, the quality of the water supply, and the operation of the sewerage system. Investigations are made as to whether adequate protection is given to the water supply and whether contamination of the water supply has taken place. Because of the two to six weeks incubation period for hepatitis, there is no practical investigation possible of any food source.

There have been no cases of infectious hepatitis traced to public water supplies in Florida. Public water sources are routinely checked for possible contamination. The hepatitis virus is susceptible to proper levels of chlorine used in water supplies.

When cases of serum hepatitis occur (there were 396 in Florida in 1972) efforts are made to investigate and control sterilization techniques in facilities where the infections could have taken place.

One Possible Source of Hepatitis

Unless you make a practice of eating shellfish from unknown sources or from growing areas not approved by the Division of

Health, you will be in little danger of contracting infectious hepatitis from oysters or clams.

The Division of Health's shellfish sanitation program tests and approves all Florida waters from which commercial shellfish are taken to make sure they are adequately pure for the growing of shellfish and safe to the public health.

However, some people, who go digging for clams or gather oysters from unapproved waters for their own consumption are in danger of contracting infectious hepatitis or some other gastrointestinal disease. The illegally bootlegged shellfish are not allowed in Florida markets.

SHELLFISH—Although oysters can be a source of infection for hepatitis, the Division of Health's shellfish sanitation program tests and approves all waters where commercial shellfish are gathered.



Oysters, clams, scallops, and mussels are known as bivalves. They open their shells and draw some 100 gallons of water through their gills each day, filtering out the foods they want. They also have the faculty of trapping bacteria and viruses in their bodies from sewage polluted waters. They can absorb poliomyelitis, Coxsackie, ECHO, typhoid, hepatitis and other agents in their bodies—along with other poisons. When they grow in polluted waters, shellfish become large and succulent—and deadly.

When humans eat oysters or clams raw, or poorly cooked, they can expose themselves to possible hepatitis and other germs and viruses. Only by thorough heating of all parts of the meat of the shellfish can a person be certain that all of the disease-producing organisms are killed.

The Division of Health's shellfish sanitation program protects the people of Florida from dangers of disease. The success of the program has been demonstrated in the fact that there have been no reported epidemics of disease from commercially-marketed shellfish in Florida in recent years. Shellfish are not a source of hepatitis in Florida—as long as the shellfish are gathered from approved waters.

Protection Against Hepatitis

Infectious hepatitis is one of the six most prevalent communicable diseases in Florida. Only gonorrhea, chickenpox, syphilis, influenza, and streptococcal infections were reported in larger numbers in Florida during 1972.

Yet, there are no general immunization methods available. Once a person has been diagnosed to have the disease, prevention of further spread can be accomplished to a considerable degree by maintaining a high standard of cleanliness—both of the patient and by persons in contact with him.

You can help the fight against hepatitis by practicing personal cleanliness and washing your hands thoroughly after using the toilet. You can urge those persons around you to also practice good personal hygiene.

Until research reveals more about hepatitis, control of the disease must be limited to common sense and cleanliness.

US-ISSN-0015-4105

FLORIDA HEALTH NOTES

OLUME 65 — NO. 9

SEPTEMBER 1973



Florida's POISONOUS PLANTS

LOVELY AND DEADLY (Cover photo) The Jerusalem cherry, with its bright red and yellow poisonous fruit, is used as an ornamental bush or potted plant in Florida.



A DECORATIVE PLANT — Dieffenbachia, or dumb cane, is used as a large showy plant in many office buildings and homes. The leaves and stem, if eaten, will cause irritation of the mouth and throat.

Florida's POISONOUS PLANTS

Have you discovered that you itch when you are around certain plants? Have you been ill after you handled certain shrubs?

You probably know that the leaves, berries, fruits and blossoms of some plants are poisonous. Do you know which ones?

A total of 6,259 persons was reported to Florida's poison control centers in 1972 with some kind of poisonings. About 2,000 were hospitalized. Of those, 108 were made ill as the result of poison from plants. An additional 42 persons were made sick because of eating poisonous toadstools and mushrooms.

The words, POISONOUS PLANTS, suggest to the average person plants that are poisonous upon contact. Most poisonous plants, however, are harmful only when they are eaten. Many persons are made ill from plants but they still do not see a physician. They suffer silently from allergies, or skin-irritation from such plants as poison ivy or poison oak.

This issue of *Florida Health Notes* will tell you something about poisonous plants found in Florida which may annoy you or endanger your health. We will also give simple first aid measures—but above all, you should take the victim to see a physician.

Many homeowners and gardeners are not aware that some of our common, most beautiful plants contain highly poisonous substances. Some plants are toxic only if a portion of the plant is eaten; some have substances that irritate the skin if they are touched. Some plants are cultivated because they will grow in places and under conditions where other plants will not survive.

We want to make it clear, we do not advocate the destruction of the poisonous plants listed in this issue of *Florida Health Notes*. The list in this publication is not all inclusive. It contains only a description of some of the more common plants.

Many of the plants are ornamentals introduced from other countries where their poisonous properties are well-known, their medicinal and sometimes lethal properties are appreciated and mentioned in the literature of those countries.

Knowledge of Plants is Important

Only an extremist would advocate the banishment or destruction of all of the plants listed in this publication. However, Floridians and visitors to the state need to know about these plants. The principal hazard is not so much in the plants, but in people's unfamiliarity with them. The advisability of maintaining these plants can be best determined on their accessibility to children; the ability of children to understand the dangers of the plants, and to distinguish between dangerous and harmless ones; and the extent to which the grower can control his plants and dispose of the plants' discarded portions—such as fallen fruit and trimmings.

Anyone who knowingly sets out poisonous plants around his property is usually aware of their hazards. When the property changes hands, the new owner may not be aware of the hazardous "pets" he has acquired, and may become an innocent victim of the plants. He may be left some poisonous plants without knowing what type of plants he has purchased and without a warning.

When a house is sold, the seller should inform the buyer of any perils from plants and the buyer should inform himself of the identity of the plants. If necessary, he should seek competent aid in identifying all plants and determining their good and bad aspects.

FLORIDA HEALTH NOTES

Published monthly by the Division of Health (Wilson T. Sowder, M.D., M.P.H., Director) of the Florida Department of Health and Rehabilitative Services. Publication office, Box 210, Jacksonville, Florida 32201. Second Class Postage paid at Jacksonville, Florida. Printed since 1892, this publication is for individuals and institutions with an interest in the state's health program. Permission is given to quote any story providing credit is given to the Division of Health. Editor: Robert A. Schoonover, M.A.
Post Office Form 3579 should be mailed to Box 210, Jacksonville, Fla. 32201

Parents need not teach their children to fear plants, but they must be on the alert for plant perils as well as dangers from other sources. Plants known to have toxic properties should be treated with the same respect as other common household hazards, such as matches, electricity, gasoline, insecticides, the contents of the medicine cabinet — and the automobile.

Susceptibility of the Individual

The susceptibility of individuals varies greatly. Some may be highly susceptible; others less so, and others seemingly immune. But immunity can be temporary and so much is dependent on the physical condition of the individual. Susceptible individuals usually can diagnose the cause of their own troubles by close ob-

---

POISONOUS AND DANGEROUS — People have been poisoned by oleanders (Left) when they used the branches to skewer meat or burned the leaves. The Spanish bayonet (Yucca) is not poisonous but dangerous to children and pets. Both plants are common in Florida.



servation of the circumstances and conditions under which their irritation or illness occurs.

The toxicity of plants also varies. Some plants are poisonous only at certain times of the year — varying with the season, stage of growth, cultural environment and weather conditions.

Some plants are poisonous only in certain portions — roots, seeds, sap, leaves or stalks. Others are poisonous in all portions. External poisoning may be dependent upon the degree of substance consumed in relation to the weight of the person. Many of these plants have such an unpleasant taste or consistency that it is not likely that anyone would chew them. Some do not taste bad and therefore may be chewed or swallowed by an unknowing person.

A person may not suffer any ill effects if he handles the unbroken foliage or other toxic parts of the plant with the calloused and oily finger tips and palm of the hand. However, if any unprotected skin surface is touched by the plant material or by the crushed or oozing sap, the individual may suffer irritations.

A small amount of potent, toxic substance taken internally may be sufficient to make a small child ill; the same amount may not have any effect on an adult. Under normal circustances, no adult would think of eating an ornamental plant but the possibility of children putting toxic materials in their mouths should never be underestimated. Children can consume some bitter or otherwise ill-tasting and unattractive plant parts with or without reason — even without the local motivation of hunger. They may be just playing — or making a whistle.

In one instance, children were told by their mother not to eat a pan of tempting but harmful fruit they had picked. The children obeyed but undaunted they proceeded to squeeze the fruit and were apprehended when they were about to drink the juice. Of the 108 persons poisoned by plants in Florida in 1972, 40 were children under five years of age. Incidents where children were not prevented from partaking of the plants or their parts contributed to these statistics.

Know the Symptoms

Some of our ornamental species are capable of causing fatal poisonings. Any delay may increase the potential for disaster. Time is the most important factor in removing the substances from the person's system before it is absorbed.

If a child, or adult, who is in seemingly good health suddenly shows signs of distress and is known to have handled plants or to have the opportunity to do so, his actions immediately prior to the illness should be investigated.



GIVEN AS GIFTS— The poinsettia, often used as a Christmas gift contains a milky sap that can cause dermatitis of the skin. All parts of the plant are poisonous if eaten.

If a certain plant is suspected, it should be identified and a specimen supplied to the attending physician. Any assistance of this kind can be very important to aiding the diagnosis. The symptoms of most poisonings cannot by themselves be distinguished from symptoms of many diseases.

The symptoms may range from a simple discomfort or misery, such as a headache or respiratory difficulty, to acute illness which can cause loss of time from work or school or useful activity and expensive medical treatment. In some cases it may be impossible to discover which plant is responsible because so few people are familiar with the possible source of poisoning. Fur-

thermore, a day or two may elapse before the symptoms of poisoning appear. A child may not be able to remember where he has been so that he cannot point out the poisonous plant.

POISONOUS PLANTS FOUND IN FLORIDA

Many of the plants listed below have been involved in poisonings in Florida. Included with each is the common name, scientific name and description of the plant, and parts which produce the toxicity:

BARBADOS NUT (Jatropha curcas)

Description: This small tree found in South Florida grows up to 15 feet high. Leaves on smooth stems are up to six inches across with three to five lobes. Tiny yellow flowers produce yellow fruit which contains three seeds.

Toxicity: The seeds are poisonous and numerous cases of poisonings have occurred in Florida. Some persons have been hospitalized.



Barbados Nut (Jatropha curcas)

BELLYACHE BUSH (Jatropha gossypifolia)

Description: This shrub grows to four feet tall. Leaves are dark purple when young and three-lobed. Stalks to leaves are long and with a type of hair. Small flowers are red, producing fruit (capsule) about one-half inch long which contains three seeds.

Toxicity: The seeds are poisonous and violent vomiting and purging (or diarrhea) may begin from a few minutes to several hours after seeds are eaten.

BITTER GOURD, BALSAM PEAR (Momordica charantia)

Description: This is a vine with deeply lobed leaves. Flowers are yellow and fruit is pointed at each end. When ripe, the fruit

is orange-yellow. It opens to show scarlet red seed coverings.

Toxicity: Eating the seeds or body of the fruit will induce vomiting and diarrhea.

BRAZIL PEPPER (Schinus terebinthifolia)

Description: This is an ornamental, small spreading tree that has several leaves on a stem (pinnate) and bears red berries at Christmas time.

Toxicity: Sap of the plant may cause dermatitis in some individuals. Smoke from burning wood may irritate the respiratory system.

CAROLINA (Yellow) JESSAMINE (Gelsemium sempervirens)

Description: This woody vine, usually evergreen, is found in North and West Florida. Smooth leaves are opposite each other. Yellow, funnel-shaped flowers are fragrant. Seed pods are brown, flat capsules with several seeds in each.

Toxicity: All parts produce a poison which affects the nervous system and may cause respiratory failure. Children have been poisoned by sucking the nectar from the flowers.



Carolina (Yellow) Jessamine
(Gelsemium sempervirens)

CASTOR BEAN (Ricinus communis)

Description: This annual herb, found throughout Florida, grows up to 10 feet tall. Large, star-shaped leaves are four to 24 inches across and fine-toothed along the edges. Small flowers grow without petals in upright clusters. Some seeds are mottled, others black.

Toxicity: Eating the seeds may cause vomiting, diarrhea, abdominal pain, drowsiness, blue appearance of the skin and

unconsciousness. Death may occur. Ingestion of one seed has been reported to cause fatal poisoning when thoroughly chewed.

CHALICE VINE (Solandra species)

Description: A woody, hairy vine with large leaves and white to yellow tubular flowers, up to 12 inches long.

Toxicity: Leaves, sap and especially the flowers contain a potent narcotic which produces delirium, hallucinations and even death. If the sap is accidently put into the eyes, it can cause temporary blindness.



Castor Bean
(Ricinus Communis)

CHINABERRY (Melia azedarach)

Description: A spreading, symmetrical tree, with a dense crown, which grows up to 40 feet tall. It loses its leaves in the cooler months. Leaves are pinnate; young leaves are toothed. Purplish flowers are fragrant and produce yellow fruit with one seed.

Toxicity: All fruit, bark and flowers are poisonous, especially the fruit pulp. The poison attacks the central nervous system and causes death by paralysis. Patients may become unconscious, pale, cold and clammy, and have symptoms of suffocation.

CORAL PLANT (Jatropha multifida)

Description: A shrub which grows up to 15 feet tall, leaves are one foot across, deeply cut with a type of hair underneath.

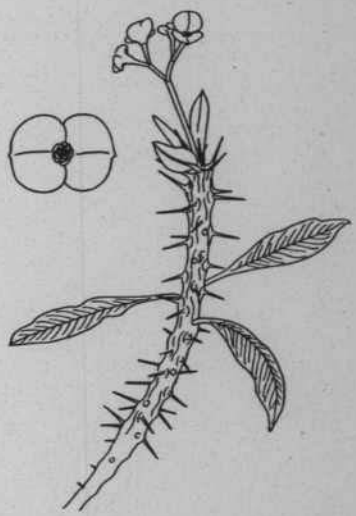
Flowers are scarlet. Yellow fruit usually falls when ripe. It contains three seeds.

Toxicity: Violent vomiting and purging (diarrhea) may begin within a few minutes to several hour after eating the fruit.

CROWN OF THORNS (Euporbis milii)

Description: This is a low-growing, very thorny plant with milky sap. Leaves are few, usually at the end of new growth. Flowers are small in long-stalked clusters.

Toxicity: The roots contain a toxic substance; the milky sap is very irritating to some people and may cause blisters.



Crown of Thorns (Euporbia milii)

DEVIL'S BACKBONE, SLIPPER FLOWER (Pedilanthus tithymaloides)

Description: Shrub has smooth, green, fleshy stems which grow up to six feet tall with milky sap. Leaves, up to four inches long, are pointed at outer ends and alternate on the stem. Red flowers, clustered at the end of the branches, look like little red birds. The plant produces fruit with seeds.

Toxicity: All parts are poisonous. The sap can cause severe dermatitis and eating the seeds can cause violent vomiting.

DOWNY THORN APPLE, METEL (Datura metel)

Description: This annual herb, purplish in color and covered with long hairs, usually grows up to four feet tall. Heart-shaped leaves may be six to 12 inches long. Flowers are large, white or yellow, funnel-shaped and six to 10 inches long. Roundish fruit is covered with prickles. Seed are small, flat and black.

Toxicity: Seeds contain the most poison, while flowers, stems, immature fruit and leaves contain less amounts of poison which may cause enlarged pupils, drying and burning sensation of the mouth, thirst, difficulty in swallowing, fever, retention of urine and convulsions.

DUMB CANE, DIEFFENBACHIA (Dieffenbachia seguine or D. picta)

Description: A shrub with green, fleshy stems that grows up to four feet tall. Leaves, on stalks up to six inches long, are variously mottled, spotted or streaked with white. Flowers are inconspicuous. Mostly a house plant but in South Florida may be planted outdoors.



Dieffenbachia (Dieffenbachia picta)

Toxicity: Leaves and stems contain poison which may cause intense irritation of mouth and throat with salivation, swelling of throat and temporary loss of speech. If swallowed, intense inflammation of stomach and intestines may occur.

GLORY LILY, GLORIOSA (Gloriosa rothschildiana)

Description: A vine which grows up to six feet tall and dies back in cooler months. Leaves prolonged into tendrils enable the plant to climb. Flowers are crimson and yellow,



lily-like and three to four inches in diameter. Fruit is in capsule form.

Toxicity: All parts of the plant are toxic, expecially the tubers. The poison causes numbness of lips, tongue and throat. Nausea and diarrhea with blood may occur, followed by dizziness and temporary loss of the use of the limbs. Unconsciousness and death may eventually occur.

Gloriosa (Gloriosa rothschildiana)

HEMP, MARIJUANA (Cannabis sativa)

Description: A course rough stemmed weed about two to six feet in height. Leaves are coursely toothed and palmate in clusters of five to seven. Flowers are small and green. Grows as a weed in Florida; cultivation is illegal. It is used in some cultures for its narcotic effects.

Toxicity: Produces a peculiar psychic exaltation followed by depression and derangement of the central nervous system.



Hemp, Marijuana (Cannabis sativa)

HOLLY, American (Ilex opaca), English (I. Aquifolium)

Description: Small trees and shrubs with alternate simple notched leaves and red berries. The English holly has smooth leathery evergreen leaves. Because of the berries, it is used extensively for Christmas decorations.

Toxicity: The berries can cause vomiting, diarrhea and dizziness. Handling the plant can cause dermatitis in some individuals.

HYDRANGEA (Hydrangea macrophylla)

Description: Found in many Florida gardens, the plant is a native of Japan. It is a stiff, stout shrub that grows three to 12 feet tall. The stems are green at first then turning a pale brown. The opposite leaves are broad and three to six inches in length. The conspicuous flowers are a cluster of individual flowers ranging up to a foot in diameter. The colors run from white to blue and pink.

Toxicity: The hydrangea contains cyanogenetic glycoside—a poison containing a cyanide which could affect the central nervous system.



Hydrangea (Hydrangea macrophylla)

JERUSALEM CHERRY (Solanium pseudo-capsicum)

Description: This is a shrub that grows up to three feet tall with shiny leaves, four inches long. Flowers are white; fruit is yellow or scarlet, globular in shape and up to one-half inch across. This plant is usually grown as an ornamental potted plant.

Toxicity: Fruit contains a poison and should never be eaten. Poison produces headaches, abdominal pain, vomiting, diarrhea and unconsciousness. Convulsions and central nervous system depressions may occur.

JIMSONWEED, THORN APPLE (Datura stramonium)

Description: This is a large annual weed growing up to five feet tall with several widespread branches and smooth, light green leaves up to eight inches long. The erect, short-stalked, funnel-shaped flowers flare out into five-pointed stars. The fruit is a dry, hard capsule covered with hard, sharp prickles. The pod splits into four sections each containing many seeds. The plant grows wild in old barn lots, along roadsides and refuse heaps, mostly in Northern Florida.



Toxicity: All parts of the plant, particularly the seeds, are poisonous. Children have been poisoned by eating the fruit or sucking the flowers.

Jimsonweed (Datura stramonium)

LARKSPUR (Delphinium ajacis or D. Cheilanthum)

Description: An ornamental herb that grows up to four feet tall with finely divided leaves, bunched at joints along the stem. Blue, white or violet flowers grow in long, tall stalks and produce seeds. The plant is commonly found in Florida gardens.



Toxicity: The leaves, stem and seeds contain a poison which causes dryness of the mouth, nausea, vomiting, restlessness, itching skin and diarrhea.

Larkspur (Delphinium ajacis)

LANTANA (Lantana camara)

Description: This is a herb-like shrub that grows up to five feet tall. Stems are green to brown and squared, and at times armed with weak spines. Leaves are toothed, usually opposite each other and three inches long. Flowers are white, yellow, or pink—changing to orange or scarlet. Fruit turns from green to dark blue.

Toxicity: The berries and leaves contain a poison which causes pupils of the eyes to pin point. Diarrhea, vomiting, extreme muscular weakness and coma may follow.

LIGUSTRUM, WAX PRIVET (Ligustrum japonicum)

Description: A shrub or small tree up to 15 feet tall. Leaves are glossy, dark green up to four inches long. Flowers are small, creamy white in clusters. Fruit is a small berry. The shrub is often used as a hedge or base planting for houses.

Toxicity: Leaves and fruit contain a poison which causes nausea, vomiting, intense diarrhea, dehydration and unconsciousness. Convulsions may occur.



Ligustrum
(Ligustrum japonicum)

MANGO (Mangifera indica)

Description: This is an evergreen tree found in South Florida which grows up to 60 feet high. Leaves are stiff and narrow. Flowers are pinkish and white in irregular branched clusters. Fruit is large and smooth with a large flat seed.

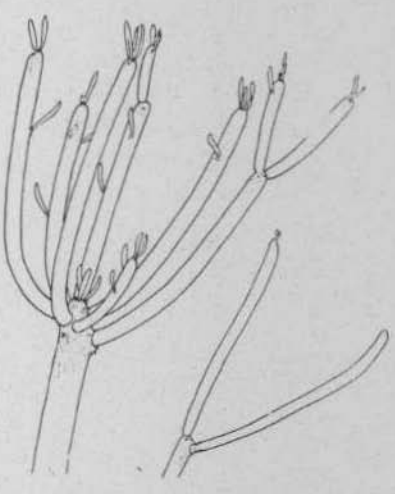
Toxicity: The sap of the mango tree contains a poisonous material that is very irritating to susceptible people. Eating mangoes may cause a rash around the mouth from eating the fruit. The plant may cause blisters and swelling very similar to poison-ivy poisoning.

Mango (Mangifera indica)

MILK BUSH, PENCIL TREE
(Euphorbia tirucalli)

Description: This is a shrub which grows up to 20 feet high with milky sap. It is popular in North Florida as a house plant. Small green leaves are inconspicuous at the end of branches and usually fall off as new branches are formed. Flowers are in small clusters. Sap flows freely from cut or bruised plant.





Toxicity: The milky sap and all parts of the plant are toxic. The milky sap is very irritating to the skin and eyes. It is poisonous if taken internally.

Milk Bush (Euphorbia tirucalli)

MISTLETOE (Phoradendron flavescens)

Description: A small parasitic plant that grows in various trees. Its light green oval-shaped leaves grow opposite each other with clusters of whitish berries emerging from the joints of the leaves and stem. It is used as Christmas decoration.

Toxicity: The berries are poisonous, causing diarrhea, vomiting, narcosis and affecting the heart beat similar to belladonna.

Mistletoe (Phoradendron flavescens)



MORGAN LEPIOTA, GREEN GILL (Lepiota morgani)

Description: A large, white mushroom, common in Florida, that grows up to 12 inches across. It has brown scales when mature. Gills are white when young, green when mature.

Toxicity: All parts of the mushroom are poisonous, either raw or cooked. Severe inflammation of the stomach and the intestinal tract may occur. Since there is no easy way to determine poisonous mushrooms from edible ones, it is well to leave them alone. Some species mean certain death.

NIGHT BLOOMING JESSAMINE, POISON BERRY (Cestrum nocturnum)

Description: A sprawling shrub that grows up to 12 feet tall with glossy, green leaves approximately eight inches across. Greenish-white flowers are tubular. Fruit is in the form of small, white berries.

Toxicity: The fragrance of the flowers can cause severe headache, nausea, dizziness and respiratory irritation to sensitive persons. The white fruit is said to be poisonous.

OLEANDER (Nerium oleander)

Description: This is a shrub that grows up to 20 feet tall with heavy, green stems. Leaves are stiff and pointed, in whorls of three, and up to eight inches long. Single or double flowers may be red, white, yellow or pink. The blossoms are three inches across.



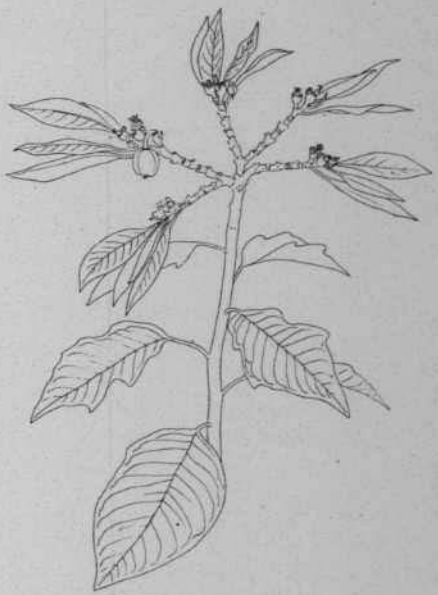
Oleander (Nerium oleander)

Toxicity: All parts are poisonous. People have been poisoned by using branches to skewer meat or stir food. Symptoms are nausea, vomiting, colic, dizziness, drowsiness and decreased pulse rate. The poison may cause respiratory paralysis and death. Contact with the plant can cause dermatitis. The smoke of burning oleander is also poisonous.

POINSETTIA (Euphorbia pulcherrima)

Description: The shrub grows up to 10 feet tall. Leaves are lance-shaped, alternating on the stem. Colored leaves form the showy part of the plant. Flowers are small, greenish with yellow glands. In Florida the fruit is seldom formed. The plant is grown as a yard flower around many homes and widely used as a Christmas potted plant.

Toxicity: The toxic substance is found in all parts of the plant. The milky sap can cause dermatitis and blisters on sensitive skin. Taken internally, the poison can cause inflammation of the lining of the stomach and intestines. Children have been killed by eating stems or leaves of this plant.



Poinsettia (Euphorbia pulcherrima)

POKEWEED, POKEBERRY (Phytolacca americana)

Description: This is a robust herb-like plant growing up to six feet tall from thick, fleshy roots. The stems are much branched at the top. The lower leaves are a foot or more long, gradually diminishing until the upper ones are about three inches. The white flowers are borne in narrow clusters several inches long. The flattened purple-black berries are



up to one-half inch in diameter and contains several seeds. The plant occurs throughout Florida, most often in open hamocks and along fence rows.

Toxicity: All parts of the plant, particularly the roots and berries are toxic. Nausea, vomiting, purging, retching and severe convulsions occur. Death may result from paralysis of the respiratory system. Children have been poisoned by eating the berries and roots.

Pokeweed (Phytolacca americana)

POISON IVY (Rhus toxicodendron)

Description: This is a vine or low bush with toothed leaves in groups of three. Flowers are small, greenish-white. White fruit is waxy and round, growing in clusters. A good motto, "Leaves three, leave it be." One should also be wary of any plant or vine having white berries.

Toxicity: A poisonous substance is found in all portions of the plant, expecially the sap. It causes an itching or burning sensation which may occur in a few hours or up to five days after touching the vine. Severe exposure may produce absesses, enlarged glands and fever.



Poison Ivy (Rhus toxicodendron)

POISONWOOD, CORAL SUMAC (Metopium toxiferum)

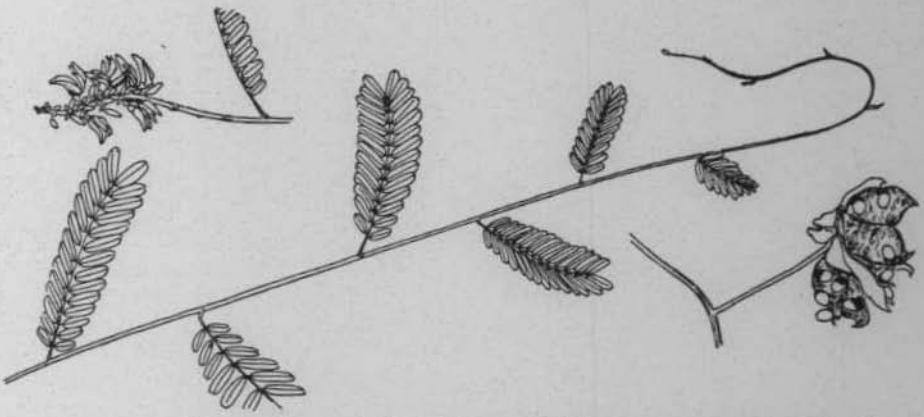
Description: Common in South Florida, this is a shrub or tree growing up to 35 feet tall with leathery, oval, alternating leaves that are up to three and one-half inches in length. Small flowers are yellowish green; the orange-yellow, oval fruit has one seed.

Toxicity: All parts of the plant contain a poison, especially the sap which may contaminate clothing, shoes, etc., for months. First symptoms are itching or burning sensations which may occur in a few hours or up to five days after exposure. Severe reaction may produce fever, abscesses and enlarged glands.

ROSARY PEA, CRABEYE VINE, JEQUIRITY BEAN (Abrus precatorius)

Description: A woody, climbing vine with alternating leaves about four inches long. Flowers are pea-shaped which produce flat pods with scarlet seeds with jet black spots. Seeds are sometimes used in necklaces.

Toxicity: The seeds are poisonous and if thoroughly chewed the results could be fatal. The poison causes weakness, trembling hands, nausea, vomiting and severe diarrhea, cold perspiration and small and accelerated pulse.



Rosary Pea, Jequirity Bean (Abrus precatorius)

SANDBOX TREE (Hura crepitans)

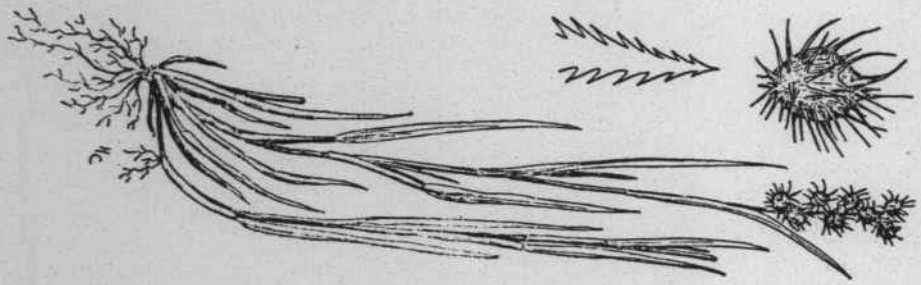
Description: This tree grows up to 50 feet high. Young trees are covered with sharp pointed spines. The sap is milky and acrid. Leaves are heart-shaped, thin and alternating, up to five inches across. Flowers are small and reddish. Fruit, about three inches across, contains 10 to 14 seeds. When mature, the fruit may explode violently.

Toxicity: Seeds and sap contain a poison that causes nausea, stomach pains, vomiting, bloody diarrhea and possibly death. The sap can be irritating to the skin.

SANDBURR (Cenchrus pauciflorus)

Description: This low-growing grass is found in sandy fields and grasslands of Florida. The plant produces spikelets of seed pods which are surrounded by stiff barbs.

Toxicity: While not poisonous in the common sense, the barbs of the sandburr can enter the skin of humans and animals and cause inflammation and infection.



Sandburr (Cenchrus pauciflorus)

TOP PRIMROSE (Primula obconica)

Description: This is a winter-flowering ornamental plant, grown in greenhouses and imported by florists for sale during the spring months. The individual leaves are nearly round, about two to four inches long, blunt at the tip and heart-

shaped at the base. The flowering stems, two to six in number, rise from the center of a rosette of leaves. The pale pink or rose-colored flowers are produced in a cluster of five or more at the top of the flower stalk.

Toxicity: The hairs on the stem and leaves contain a substance irritating to many people. Handling the plants may result in itching dermatitis resembling ivy poisoning but usually less severe.



Top Primrose (Primula obconica)

TREE TOBACCO (Nicotiana glauca)

Description: This is a shrub or small tree that grows 10 to 15 feet tall. The trunk is slender; the branches tend to be flexible, slender and green in color. The thin, green, waxy leaves are elliptical in shape and two to six inches long. The tubular flowers are borne in clusters of yellow or greenish-yellow. The individual flowers are flared open at the end. These are followed by egg-shaped seed pods about one-inch long. It is grown in Florida as a curiosity rather than an ornamental plant.

Toxicity: The plant, like other tobaccos, contain the alkaloid — nicotine — which constricts the small blood vessels.

TUNG OIL TREE (Aleurites fordii)

Description: This is a tree with syrupy sap that grows up to 25 feet in North and West Florida. The alternate leaves are heart-shaped and up to 10 inches long. The pale pink or white flowers are one inch across and the fruit on drooping stems contain three, chestnut-like seeds. The tree is sometimes planted for shade.

Toxicity: All parts of the tree contain a poison which causes inflammation of the stomach and intestinal tract when taken internally. Purging can be very severe.

WATER HEMLOCK, COWBANE (Cicuta curtissi)

Description: Always found growing near water, this herb has hollow stems that grow up to seven feet tall. The roots are large and swollen with air cavities. Leaves are alternate and compound; flowers are small and white in umbrella-shaped clusters. Fruit is small and dry.

Toxicity: The roots are especially poisonous and people have died from eating the parsnip-like roots. Children have been poisoned by making whistles from the hollow stems. The poison causes abdominal pain, nausea, vomiting, diarrhea and violent convulsions.

YELLOW ALLAMANDA (Allamanda cathartica)

Description: Found in Central and South Florida, this vine grows up to 10 feet tall and is often pruned to a shrub. The leaves, up to six inches across, are glossy and thick with smooth edges. The yellow flowers are two to four inches across, bellshaped and in clusters. The fruit is a round, prickly pod.

Toxicity: All parts of the plant are reported poisonous. The milky sap can cause dermatitis on susceptible people.



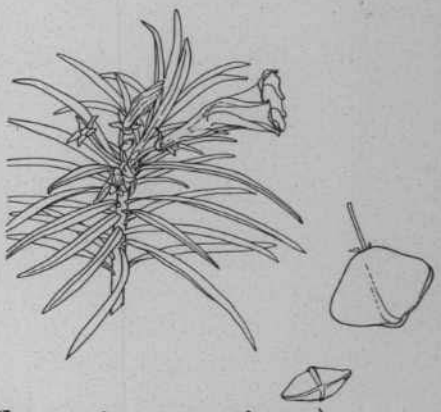
Yellow Allamanda
(Allamanda cathartica)

YELLOW OLEANDER, LUCKY NUT (Thevetia peruviana)

Description: This is a shrub or small tree with a short trunk and a dense crown. Leaves are dark green, glossy, up to one-half inch wide and six inches long. Yellow tubular flowers grow up to three inches long. Green, fleshy fruit turns yellow when ripe and then black. The seeds are brown. The nut

is sometimes sold as a good luck charm.

Toxicity: All parts of the plant contain two deadly heart poisons. Contact with any part of the plant can cause severe dermatitis to some people. If eaten it may cause vomiting, cold clammy skin, feeble pulse, convulsions and possible death.



Yellow Oleander (Thevetia peruviana)

OTHER POISONOUS PLANTS

The Nightshade Family

White potatoes and tomatoes, which make up a great part of our diet, are members of this family. In general, the green parts of the plant are very poisonous; drugs, such as belladonna and atropine, are derived from plants of the Nightshade family. All berries, except the tomato, are poisonous until ripe. The "eyes" and new sprouts of the Irish potato contain a poison; tubers showing green from exposure to the sun are unfit for food. Several cases of fatal poisonings from this source have been reported.

The Amaryllis and Iris Families

These families of plants include the common amaryllis, zephyr-lily, century plant, spider lily and such flowering plants as narcissus and daffodil. Most of these plants are poisonous if eaten. Care should be taken that bulbs are never left where children or pets have access to them. The rootstock of the iris family contains a strong purgative agent and some people may develop a skin rash from handling the roots or other parts of the plant.

The Palm Family (Arecaceae)

A good general rule to follow is that all palm seeds and fruits are poisonous to eat. The exceptions are coconut palm, date palm and jelly palm. The juice of the fishtail and other palms may be

irritating to the skin. The tubers of such ornamentals as "elephant ear," dasheen and other related plants are poisonous when raw. Leaves may produce skin irritation. Unripened fruit is poisonous.

Coexisting with Poisonous Plants

The way to coexist with poisonous plants is to treat them with respect. We do not advocate their extermination but one is wise to learn the identity of the hundreds of plants in Florida that are poisonous—in part or in whole. Some plants, such as Spanish bayonet (Yucca) and cactii are not poisonous but are dangerous because of needle-sharp leaves and spines which can puncture the eye, or the skin and permit infection. These plants should be treated with respect and not grown where there are pets or children.

Children should be taught not to put anything into their mouths except food. Adults, too, should refrain from chewing on leaves or twigs of plants when walking through a garden or woods.

If a person comes in contact with a poisonous plant, or consumes part of one, he should carry out first aid measures and then consult a physician. Time lost in doing so may mean the difference between life and death.

FIRST AID MEASURES — If Poison is from Plants

If poisonous substances are on the skin: wash thoroughly with soap and water as soon as possible.

If poison is swallowed: give patient a glass of water with raw egg white, or a glass of milk to make it easier to induce vomiting. This will also dilute and generally neutralize the poison.

To induce vomiting: tickle the back of the throat with a blunt end of a spoon, or the finger; or give a strong solution of salt in warm water. After vomiting, the patient's head should be positioned lower than the body so vomit will not be drawn back into the lungs. The vomited substance should be saved for analysis.

TAKE THE PATIENT IMMEDIATELY TO THE EMERGENCY ROOM OF A HOSPITAL OR TO A PHYSICIAN.

FLORIDA

HEALTH NOTES



1973 LAWS

EMERGENCY SERVICES (Cover photo) - A Miami fire department medical rescue team transfers a patient from an ambulance to the emergency department of a hospital.

ON THE SCENE — Emergency medical technicians, with the aid of local residents, give primary assistance at the scene of a motorcycle accident.



1973 LAWS for Emergency MEDICAL SERVICES



John and Mary R, a retired couple from Pennsylvania, were on a tour of the United States. They drove along the Florida interstate highway enjoying the palm trees, sunshine and scenery. They were apparently in good health and everything was fine.

Then - suddenly - a passing car whipped back into the line of traffic ahead of them, cutting too close. John slammed on the brakes and the trailer he was pulling jackknifed and overturned - pulling their car with it.

People came running. The Florida Highway Patrol and an ambulance from a hospital in the nearby city arrived on the scene in minutes. Mary had been badly injured and was given emergency treatment. John, who had had his seat belt fastened, was not hurt too badly, but he was quite shaken by the experience. Suddenly he collapsed. The ambulance technician, who had had Emergency Medical Technician's training, recognized the signs of a heart attack. Closed chest massage was given to John to maintain life.

As the couple was being transported to the hospital, one of the ambulance attendants radioed the Coronary Care Unit of the hospital. The physician monitoring the cardiac unit requested an electrocardiogram and the EKG unit in the ambulance was attached to John. Reading the tracing as it was received through the telemetry signals, the physician was able to instruct the technician on the proper medication.

In the hospital's emergency department, the R's were given further treatment. John's condition was stabilized and he was

transferred to the Coronary Care Unit; Mary, who had several broken bones, was placed in the orthopedic department.

Emergencies can happen without warning! Vehicle accidents took over 2,300 lives in Florida in 1972; about 200,000 persons were injured. Other emergencies require treatment and transportation to hospitals. Over 42,000 persons in Florida died of heart disease during 1972. Many of these were sudden attacks and emergency medical care, if given within a few minutes of the attack, could have meant survival of the patient.

These are the essentials of emergency medical services;

* notification of the emergency and swift response;
* emergency first aid and resuscitation on the spot and in transit;
* transportation to a nearby hospital's emergency department for additional care; and
* if necessary, transportation to a medical facility with specialists.

Effective emergency medical services are now available in some Florida communities. Quality services for residents and visitors will be expanded under new 1973 laws which set up an enlarged Emergency Medical Services Section in the Division of Health. In addition, plans were underway for regional emergency medical telecommunication systems that will possess an emergency number system, a central dispatch network, better communications between the protective services, and between ambulances and receiving hospitals.

You, the reader of **Florida Health Notes,** can ask: What does this do for me?

Should you have an emergency, it means that you will receive swift assistance, adequate, temporary treatment of your

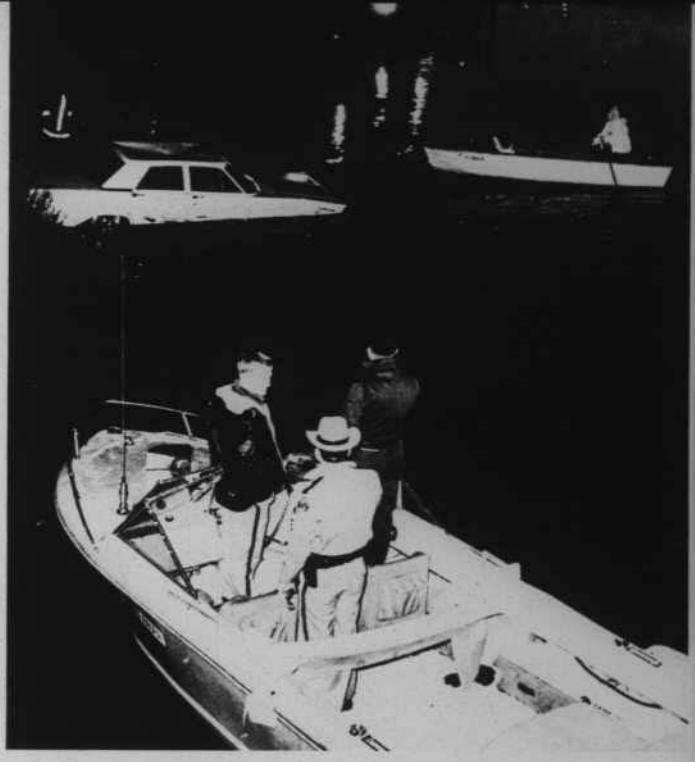
---

Published monthly by the Division of Health (Wilson T. Sowder, M.D., M.P.H., Director) of the Florida Department of Health and Rehabilitative Services. Publication office, Box 210, Jacksonville, Florida 32201. Second Class Postage paid at Jacksonville, Florida. Printed since 1892, this publication is for individuals and institutions with an interest in the state's health program. Permission is given to quote any story providing credit is given to the Division of Health.

International Standard Serial Number—US-ISSN-0015-4105

Editor: Robert A. Schoonover, M.A.

Post Office Form 3579 should be mailed to Box 210, Jacksonville, Fla. 32201.



PROBLEMS — Emergencies can happen anywhere and at anytime. When drownings, suicides, homicides, heart attacks occur, the emergency medical team must be ready — day or night.

injuries or condition, swift transportation to the nearest emergency department. It will mean that the ambulance technicians will be highly trained, compassionate, and capable of maintaining life until skilled medical care can be obtained.

Some people believe their community has adequate ambulance service if there is a vehicle, equipped with flashing red lights and a siren, capable of carrying people to a hospital. People may not be aware that the vehicle has little more than a first aid kit and the attendants have only the rudiments of first aid training. But Florida wants more than this for its people and visitors.

It is only since the 1973 Legislature passed the new Emergency Medical Services law that ambulance personnel are required to have more than a few hours of first aid training. Barbers and cosmetologists, who cut or dress your hair, must have over 1,000 hours of training and experience before they are licensed. Public health authorities feel that men and women who are responsible for taking care of people in emergencies and literally are responsible for the life or death of an individual need the best training possible.

This issue of **Florida Health Notes** will tell you about the new state laws regarding emergency medical services, what is planned in the way of telecommunications systems, the role of the Division of Health of the Department of Health and Rehabilitative Services in the certification of ambulance companies, ambulances and technicians, and the various types of services available in Florida.

PROBLEMS — Distance, People, Finances

Florida is the vacation state for millions of Americans. Its sunny, balmy winter climate and dozens of tourist attractions draw millions of visitors to our sunny strands every year. But at the same time, Florida is a state of long distances. Once tourists cross the state line they frequently expect to see the subtropical scenery. But Key West is over 800 miles from Pensacola. It is 350 miles from Jacksonville to Miami; and Tallahassee, the capital, is some 500 miles from the metropolitan center of Dade County. The state has over 69,000 miles of highways and 22,000 miles of city streets.

Florida has a population of 7.2 million citizens. Seventy percent of this population - or over five million - live in 11 of the state's 67 counties. Some of the larger communities have excellent emergency medical services; others have fragmented, un-coordinated services. Most of the rural areas are lacking in adequate emergency medical assistance.

Not only is emergency medical services in rural areas and smaller cities difficult to acquire, some of the smaller hospitals are many miles from medical centers with their staffs of specialists. Distance is important when an accident victim needs special care. Key West is 158 miles from medical centers in Miami. An ambulance from DeFuniak Springs has to travel 81 miles to Pensacola; Apalachicola is 60 miles from larger hospitals in Panama City and 76 miles from Tallahassee.

People are the ones who need emergency medical services. Aged persons are frequently the ones who need them the most. They make up 14.5 percent of Florida's population. This is considerably higher than the 9.9 percent of the rest of the United States. In addition, there are over 23 million tourists who visit the state annually. They have emergencies, accidents, heart at-

tacks, strokes and other illnesses that require emergency medical services. The owner of an ambulance service in Tampa said his county has a rate equal to a population of 900,000 instead of 531,000, according to the accepted ratio of one emergency per day for each 10,000 population. This high rate is due to the number of visitors.

Florida ranks ninth in the nation in population, but 25th in per capita income. Only two counties have a higher rate of income than the national average. Emergency medical services cost money and some counties are hesitant to use tax money to purchase quality ambulance services for their citizens and visitors.

However, many boards of county commissioners are deciding that emergency medical services rank with police and fire services as being in the realm of county responsibilities and they are actively providing tax support for quality emergency medical services.

PROBLEMS — Accidents, Diseases, Deaths

You never know when you will meet with a mishap. Vehicle accidents, burns, falls, frequently require emergency medical care. Heart disease, diseases of early infancy, attempted homicides and suicides all need emergency medical services. On the average every person visits an emergency department once every year.

Accidents are the leading cause of death among persons from one year of age to 44, and the fourth leading cause of death among persons 45 to 64. Homicides and suicides are the second and third causes of death among persons 15 to 24 years of age.

Diseases of the heart are the leading cause of death among persons 45 years and older in Florida. A significant percentage of these persons possibly could have been saved if they had received quality emergency medical care within the first few minutes of the attack. The estimated annual number of cardiac emergencies in Florida runs into thousands. In addition there are hundreds of cases of asthma, emphysema and bronchitis with chronic pulmonary obstructions that impair the functionings of the heart or lungs. Many of these persons could have been saved by well-trained emergency medical technicians and well-equipped ambulances.

According to a Department of Transportation survey there are 1,458 locations on Florida's highways and streets that have an "above normal" accident rate. These intersections, curves, bridges are the scenes of accidents that require the services of emergency rescue teams.

The deaths mentioned here are only the top of the iceberg. The real tragedies are found among the hundreds of thousands of persons who are hospitalized for long periods of suffering and disability - unable to be productive because of illness and injuries. There is no way of knowing how many injuries were made worse because of improper handling or the absence of quality emergency care by ambulance attendants.

A New Day in Emergency Medical Services

For many years emergency medical care was the neglected "disease" of modern society. Born through the smoke and noise of battle, emergency medical services are the outgrowth of temporary field hospitals and crude efforts to remove the wounded from battlefields.

Little is known about the effectiveness of early ambulance services. Local funeral directors were the ones who first provided transportation for the ill and injured. They were usually the only ones in town who had vehicles that were capable of carrying patients in a horizontal manner. Sometimes there was a conflict of interest between the emergency transportation of the injured and a scheduled funeral service.

In 1966, as a result of the Federal Highway Safety Act, Florida embarked on a program known as the "certification of ambulances." The State Board of Health, now Division of Health, was given the responsibility for this certification. The American Red Cross first aid training course was the basis of certification of ambulance attendants. Ambulances had to have minimal equipment to meet compliance and certificates were adopted for ambulance owners.

A 1970 survey, carried out in Florida by the Division of Health and the Florida Regional Medical Program, found that Florida had;

According to a Department of Transportation survey there are 1,458 locations on Florida's highways and streets that have an "above normal" accident rate. These intersections, curves, bridges are the scenes of accidents that require the services of emergency rescue teams.

The deaths mentioned here are only the top of the iceberg. The real tragedies are found among the hundreds of thousands of persons who are hospitalized for long periods of suffering and disability - unable to be productive because of illness and injuries. There is no way of knowing how many injuries were made worse because of improper handling or the absence of quality emergency care by ambulance attendants.

A New Day in Emergency Medical Services

For many years emergency medical care was the neglected "disease" of modern society. Born through the smoke and noise of battle, emergency medical services are the outgrowth of temporary field hospitals and crude efforts to remove the wounded from battlefields.

Little is known about the effectiveness of early ambulance services. Local funeral directors were the ones who first provided transportation for the ill and injured. They were usually the only ones in town who had vehicles that were capable of carrying patients in a horizontal manner. Sometimes there was a conflict of interest between the emergency transportation of the injured and a scheduled funeral service.

In 1966, as a result of the Federal Highway Safety Act, Florida embarked on a program known as the "certification of ambulances." The State Board of Health, now Division of Health, was given the responsibility for this certification. The American Red Cross first aid training course was the basis of certification of ambulance attendants. Ambulances had to have minimal equipment to meet compliance and certificates were adopted for ambulance owners.

A 1970 survey, carried out in Florida by the Division of Health and the Florida Regional Medical Program, found that Florida had;



SENDING SIGNAL — An emergency medical technician tests a telemetry signal from the field.

* inadequately trained ambulance attendants in many communities;
* inadequately equipped and unsatisfactory ambulances;
* an almost complete lack of effective emergency medical services communications system, and;
* inadequate public support and tax monies to provide an upgraded emergency medical service system.

The Governor's Highway Safety Commission, in 1971, funded a special project in the Division of Health to combat certain of the basic inadequacies in Florida's emergency medical services. The goals were:

* adequate training for ambulance personnel; and
* education of the citizens of Florida to understand and demand quality emergency medical services.

Specifically, the objectives of this project were to establish statewide emergency medical technician training on a quality basis and to create community emergency medical service advisory councils in those areas of the state most susceptible to improvements in emergency medical services.

During 1971, 600 emergency medical technicians were trained; eight community advisory councils were formed; a state emergency medical service advisory council was established; the Florida Registry of Emergency Medical Technicians was created.

Another grant from the Governor's Highway Safety Commission in 1972 allowed the Division of Health to continue the support of emergency medical technicians' training, to further the establishment of community advisory councils, and to develop an Emergency Medical Service Data Base which included patient report forms and other data. At the present time, there are at least 30 counties with emergency medical service advisory councils and one regional council - centered in Tallahassee and including six neighboring counties.

In 1973, a contract between the Florida Regional Medical Program and the Division of Health allowed the enlarging of the staff of the Emergency Medical Service Program and its elevation to section status in the Bureau of Local Health Services.

What Are Emergency Medical Services?

In order to know what emergency medical services are, we need to define the components of a service and find out how they serve the people of Florida.

Discovery and Notification of the Accident:

When Mr. and Mrs. R had their accident on a Florida superhighway, a number of people saw the accident happen and someone notified the local ambulance service and Florida Highway Patrol - either by telephone or radio transmission. If this accident had happened at night, and no one saw it occur, discovery could have been slower and police and medical authorities might not have been notified so promptly. There is a need in Florida for a central emergency medical number that would avoid multiple telephone listings and jurisdictional questions.

Communications Network:

This component of the emergency medical services is essential to assure that when an emergency agency - public or private - receives the call for help, it can quickly dispatch the appropriate vehicles and personnel to the scene. A central dispatch office can link all emergency components together and thus avoid waste and duplication.

Assistance at the Site of Incident:

It is important that those who discover the victim begin effective care until better trained individuals arrive, but they

need to know what they are doing. Emergency medical technicians have received instruction and are experienced in removing people from wrecked vehicles. They know how to treat burns, to splint broken limbs, and to recognize common medical emergencies.

Transportation of Patients:

The victim must be removed from the scene of the emergency to a facility for definitive care. Prompt response to a call for help is a primary requirement. Emergency vehicles, whether publicly or privately owned, should be fitted with the equipment that will make them small "mobile emergency" rooms. The vehicle should have enough headroom so that the technician can work comfortably standing nearly upright, perform cardiopulmonary resuscitation and other skills. Standards have been set by the U. S. Department of Transportation that include emergency kits for delivery of infants, resuscitation equipment, artificial ventilation supplies. The vehicles should be equipped with two-way radios so they can alert hospitals' emergency departments as to the type of emergency being brought in, the condition of the patient, and approximate time of arrival. Many vehicles are being equipped with telemetry systems for use in salvage of heart attack victims.

Emergency Department of the Hospital:

The hospital should be ready to receive emergency patients and capable of providing medical care beyond that given by the ambulance technician at the scene of the accident. Life threatening conditions must be corrected, the victim stabilized, and a diagnosis made so he may receive follow-up care or be transferred to specialized facilities - if necessary.

Care After Emergency Services:

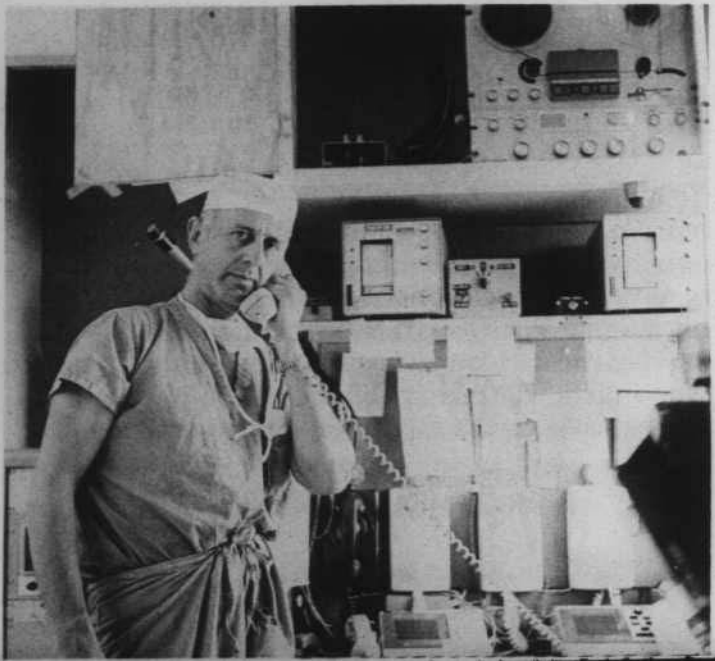
After the patient's condition has been stabilized, he is usually admitted to the hospital for care and supervision until he recovers. Large hospitals have coronary care units, intensive care units, respiratory care units, and trauma centers. Here specialists are available to provide more sophisticated treatment. Because only the larger hospitals have specialists, victims of emergencies often must be moved from small hospitals to the metropolitan medical centers.

Ambulance Services in Florida

There are approximately 220 ambulance services in operation in Florida. This compared with 271 in 1972 and 287 in 1971. Services certified by the Division of Health include those operated by funeral homes, commercial ambulance firms, volunteers, hospitals, and local governments.

A trend is underway in Florida for funeral homes to quit the ambulance services although they are the ones which generally provide emergency medical services in sparsely populated counties and the routine transportation of the sick in metropolitan areas. Commercial, or privately owned companies, usually operate in large populated counties. Even in Jacksonville and parts of Dade County, which have fire department-operated emergency medical services, 40 percent of the transporting of patients is by private ambulances. Substantial services in Miami and Miami Beach use a combination of fire department emergency teams and a private ambulance service that does most of the transporting of victims to the hospitals.

Some "commercial services" are represented by the owner of a garage at a local crossroad who drops his auto work when he hears about an accident, races to the scene, pulls the victims from the wreck, piles them into his ambulance (which is poorly equipped) and races 20 miles over bumpy roads to the nearest hospital with his emotions high on adrenalin and his foot heavy



AT THE HOSPITAL — A physician, who monitors the hospital's electrocardiogram receiving units, takes the call from the ambulance. In the background are the EKG print-out units.

on the gas pedal. The new emergency medical services laws will help eliminate this type of operation.

Volunteer and government - operated services usually are found in medium populated counties. While volunteer emergency teams are dedicated men, they may lack training and the vehicles are sometimes poorly equipped.

Hospital-based ambulance services operate in both small and medium size counties. Training of personnel ranges from excellent to standard first aid courses. Vehicles, in many cases, are not adequate, have only minimum equipment and possess poor or no communication system.

The government-operated services are usually manned by policemen or firemen, but there are at least two ambulance services in Florida which are operated as independent agencies. Frequently fire departments operate a rescue squad in addition to the other ambulance services in the community.

New Emergency Medical Service Laws

For the first time in its history, Florida has a state-wide comprehensive emergency medical service law that can provide all of its citizens with the best emergency medical services available. But this will require educating the public, financing, and training of personnel.

The intent of the new law is:

To prevent disabilities and needless loss of life caused by accidents, sudden or acute illnesses, or other calamities by improving the quality of emergency medical services through the establishment and maintenance of life-saving and disability-preventing standards for all.

Division of Health, through the Department of Health and Rehabilitative Services, is responsible for the improvement and regulation of emergency medical services, and among other duties, is responsible for developing and periodically revising a comprehensive state plan.

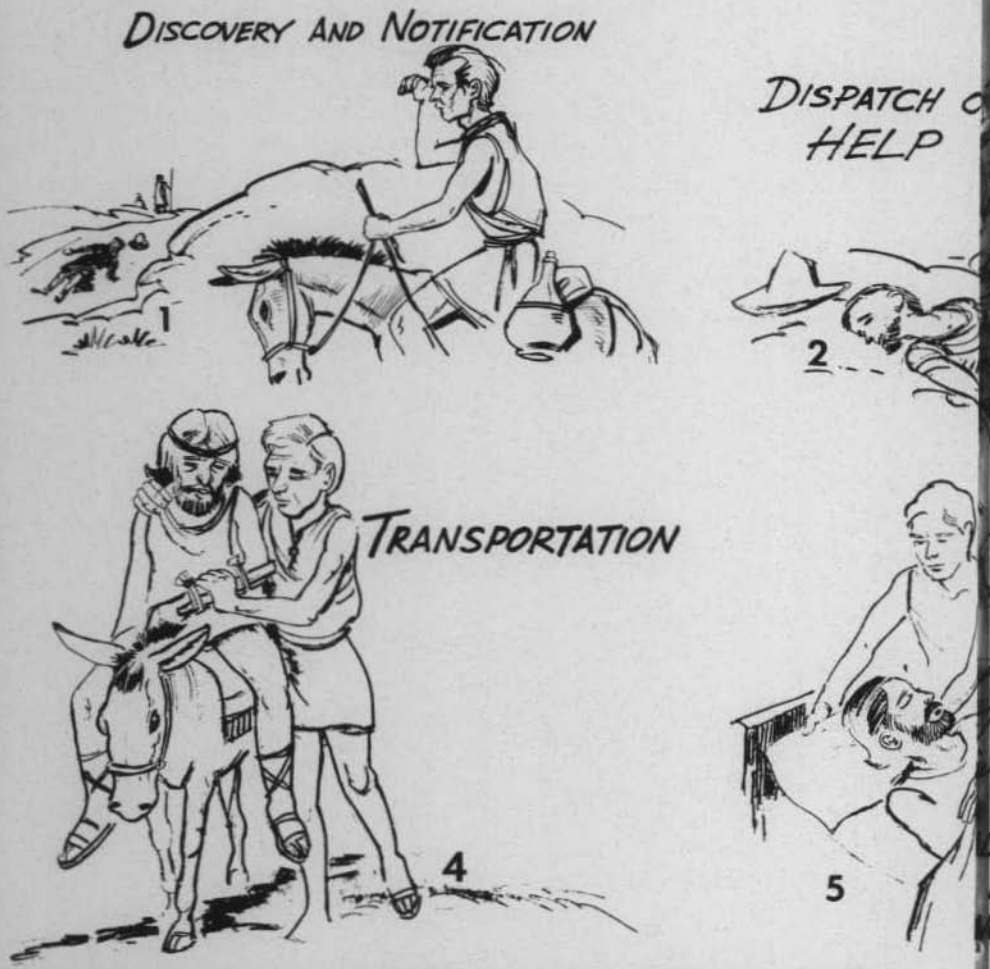
The state plan is to include, but not be limited to:

* procedures for facility and system planning;
* requirements for the operation and coordination of ambulances and other emergency care components; and
* definition of the areas of responsibility for regulations and planning.

TEXT MAY BE LOST DUE TO TIGHT BINDING.

THE GOO

- 'Patron Saint' of the En

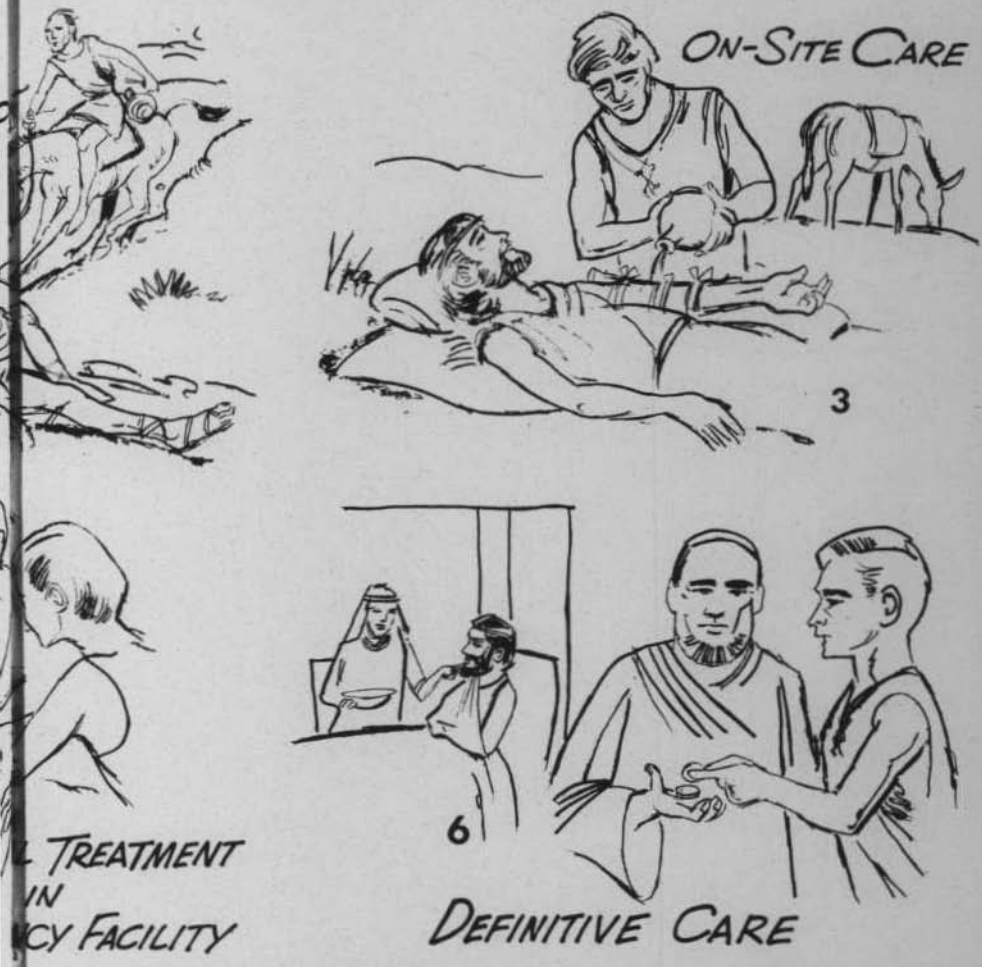


The Good Samaritan was perhaps the first "emergency medical technician." The story, as recorded in The Bible (Luke 10:30-35) is as follows: A certain man was going down from Jerusalem to Jericho when robbers attacked him, stripped him and beat him up, leaving him half dead ... But a certain Samaritan who was traveling that way (1) came upon him and when he saw the man, his heart was filled with pity. He went to him (2),

The Division of Health is responsible for licensing ambulance services. Each person, firm, corporation, association or government agency that owns or acts as an agent for an owner of a

MARITAN

ncy Medical Technicians



poured oil and wine on his wounds, and bandaged them (3); then put the man on his own animal (4) and took him to an inn where he took care of him (5). The next day he took out two silver coins and gave them to the innkeeper (6) and said, "Take care of him and when I come back this way, I will pay you back whatever you spend on him."

business that furnishes, operates, conducts or maintains, advertises or engages in a service or business of transporting the sick, injured or otherwise incapacitated persons must apply for

a license to operate an ambulance.

Each vehicle used as an ambulance must be inspected by the Division of Health. If it meets the requirements of vehicle design, construction, communications, medical equipment and supplies and sanitation, a permit is issued. The state health agency may issue temporary permits for ambulances not meeting the required standards but such permits may not exceed a one-year period.

After January 1, 1974, every ambulance covered by the laws must be occupied by two persons, one of whom holds an emergency medical technician's certificate or has a medical or a registered nurse's license.

The emergency medical technician must have completed an emergency medical technician's training course of at least 80 hours, or an equivalent approved by the Division of Health. He must complete any refresher training course required, be free of addiction to alcohol or narcotics, and free of any physical or mental defects or diseases which might impair his ability to attend the ambulance.

The ambulance driver must

* possess a valid ambulance driver's certificate;
* meet all standards, except the 80-hour emergency medical technician's training course (but he must have completed American Red Cross advanced first aid training);
* take a defensive driving course within two years, and where applicable, a flight safety or water vehicle operator's safety course;
* hold a valid Florida's chauffer's license; and
* where applicable, possess a Federal Aviation Administrative Instrument flight reference or marine certificate.

The Advisory Council

Under the new legislation, an emergency medical services advisory council of 19 members is to be formed to advise the Division of Health and Department of Health and Rehabilitative Services on the conduct of the emergency medical services activities, programs, policy developments and establishment of priorities. It will also

* alert state agencies to new problems and developments in the emergency medical service field throughout the United States and Florida;
* review annually the development of the Division of Health's emergency medical services plans, budgets and regulations; and
* encourage and facilitate planning, communications and cooperation among all emergency medical services - both public and private.

The council is to consist of four physicians whose primary interest is in the field of emergency medicine; two operators of licensed ambulance services (of whom one is a governmental provider), and representatives of the emergency medical technicians, the Division of Communications of the Department of General Services, the Florida Hospital Association, Department of Transportation, Florida Health Planning Council, Governor's Highway Safety Commission, Department of Highway Safety and Motor Vehicles, Department of Education, Division of Emergency Government of the Department of Community Affairs, the Florida Nurses Association, the Florida House of Representatives, and the Florida Senate. The president of the Florida Department of the United States Civil Defense Council will also serve on the emergency medical service council. All but the legislative representative are to be appointed by the Governor.

Grants for Emergency Medical Services

The 1973 Legislature also passed a law that authorizes the Division of Health to make grants to counties to help provide emergency medical services. The grants would be contingent upon the local governments providing an equal amount of matching funds.

Disbursements will be based on the following considerations:

* the needs for emergency medical services and the requirements of the population to be served;
* the conforming of all emergency vehicles and technicians to state standards;
* the meeting of standards for minimum equipment and supplies;
* the communications link-up of vehicles with the operat-



COMMUNICATIONS CENTER — This Lee County emergency medical service's communications center is tied in with other county protective services — fire, police and sheriff.

ing base and hospital designated as the primary receiving facility; and

* the providing of services on a county, multi-county or area-wide basis.

Communications Network

The 1973 Legislature also passed a bill which is to provide for a statewide system of regional emergency medical telecommunications. This was placed under the authority of the Division of Communications of the Department of General Services.

This system is aimed at locating and reporting accidents on and off the highways, statewide emergency medical service notification system, a statewide emergency reporting telephone number, a system of patient referrals, and a statewide and area-wide communications system.

Governor Reubin Askew has set a goal for the communications network when he indicated that by 1976 Floridians will have access to the emergency number 911.

The Division of Communications has already redesigned some of the radio networks used by state agencies, (forestry, natural resources, etc.) and is in the process of re-programming the local

law enforcement networks which will become part of the regional emergency systems.

Some problems are built into the developing of the regional telecommunications networks. These are

* some 400 Florida cities that have their own police departments and communications systems.
* approximately 20 telephone companies doing business in Florida, some of which divide counties. This presents a problem of tying communities and counties into a common emergency medical communications network.
* bringing private hospitals into the system. They must be convinced that it will be for the common good;
* the limited number of radio frequencies available for dispatching and telemetry.

Frequencies are not respectors of political boundaries. Therefore a regional plan for the best use of radio frequencies will not correspond with the regional plan set up by the Division of State Planning. For example, some radio signals used for dispatching extend out 75 miles. Transmitters using these signals cannot be located within each other's areas. Some frequencies allocated to Georgia by the Federal Communications Commission overlap into North Florida and these cannot be used by Florida.

If Florida demonstrates to the Federal Communications Commission that it is getting maximum use of those frequencies it already has and develops a workable plan for more, new frequencies may be opened up to the state.

The emergency medical services networks must be tied in with other life protective services, such as police and fire department networks. There is a need for a central dispatch plan by which incoming emergency calls can be channeled into a central office. The universal emergency number 911 can serve the population and various system concepts and its implementation is presently under consideration.

A regional dispatch office can be used to send the proper vehicle and attendants to the emergency. Telephone exchanges should agree with the regional dispatching offices, so when a person dials an emergency number, he is connected to the central dispatch office for his area. If the exchange's boundaries do not coincide, special arrangements and system modification will be necessary.

Broward County is a good example of regional dispatching. It has 29 communities; each had its own communications system at one time. Now these have been organized into regions. Each region has its central dispatching office. Thus, the police, fire and ambulance services can pool their frequencies, personnel and equipment - and have a united system.

The old way required the policeman who arrived at the scene of the accident to radio his dispatcher; who, in turn, telephoned the ambulance service. The ambulance service then dispatched a vehicle to the scene of the accident. This lack of direct radio communications consumed valuable time in getting emergency medical care to the victims.

The regional telecommunications systems has three components:

* a common emergency number that connects the person reporting this emergency to a central dispatch office;
* a central dispatch office which can send the proper vehicles and trained attendants to the scene with communications ties between the vehicles and the dispatching office; and
* communications between the emergency vehicle and the hospital receiving the victims of the emergency. This communications also includes telemetry.

Eventually the plan is to tie law enforcement, fire fighting and emergency medical services into a community system which will serve all of the needs in the area.

Training of Emergency Medical Technicians

At the beginning we told you about Mr. and Mrs. R. who were injured in an automobile accident and Mr. R. had a subsequent heart attack. The couple was treated by trained emergency medical technicians.

Only four years ago, fewer than 860 of the 1,700 ambulance personnel in Florida had standard or advanced Red Cross first aid training or its equivalent. Today there are more than 2,000 emergency medical technicians listed on the Division of Health's Registry who have successfully completed at least 80 hours of emergency medical technician training. Florida has 36 educational centers which train these technicians.



TRAINING — Emergency technicians attend a session in defensive driving. Many technicians receive additional training beyond the basic 80-hour emergency medical technician course.

The men receive a basic course which is founded on the U. S. Department of Transportation's guide lines. The training includes 10 hours of observation and participation in a hospital's emergency department. Men who successfully complete the training are registered in the Division of Health's Central Registry, and issued a certificate and shoulder patches.

Under the new state law, the emergency medical technicians must renew their certificate every three years after successfully completing a refresher course.

Advanced courses in emergency medical technician's training are offered by several community colleges. One college will offer a curriculum devised by the American Medical Association and the American Association of Junior Colleges that will give 65 hours of college credits and an associate degree as an emergency medical technician. Three other junior colleges are offering advanced training that includes advanced cardiopulmonary resuscitation, drug administration, administration of intravenous injections, and endotracheal intubation.

In addition, the State Fire College at Ocala is offering courses in advanced emergency extrication that teaches ambulance and rescue personnel how to remove people from automobile wrecks, water, burning buildings - anywhere emergencies occur.

In addition to formal education courses offered by community colleges, nearly all of the progressive emergency medical services carry on continuing inservice training for their men. These classes are taught by physicians, nurses and special training officers employed by the ambulance services and are held at the ambulance services' headquarters or at local hospitals.

Emergency Services at the Local Level

Emergency medical services vary from county to county. No state-wide emergency medical service system exists in Florida. Each county operates its service independently. Some counties have no organized program. Of the more than 220 ambulance services operating in Florida, 22 percent are commercial or proprietary ownership; eight percent are hospital based; 13 percent are government operated; 40 percent are operated by funeral homes; and 17 percent by volunteer ambulance companies.

Following are three examples of ambulance services, all with different ownership.

Lee County

The government-operated ambulance service in Lee County is part of the county's Division of Protective Services. This Division also includes civil defense, animal control, automobile inspection stations, and fire department. The ambulance service is operated independently of the fire department although the firemen operate a rescue squad.

The service has five vehicles of which three are on round-the-clock duty to serve the county of 105,000 population. This figure rises to some 175,000 during the winter months. An expansion of the program is anticipated with a greatly increased budget and soon the county will have four new modular vehicles, two with telemetry, and 10 new men. While the fire department has rescue squads that answer emergencies, the ambulance service does most of the emergency work and carries on routine transportation of the sick and injured. The ambulance service's communication system has been integrated with the sheriff's department, Fort Myers' police department, Lee County fire control, and Lee Memorial Hospital.

The ambulance service averages 17.3 calls per day. Vehicles are located at three places in the county and have a response time of four to six minutes to emergencies. During a four year period, June 1969 to March 1973, the service responded to 2,422 traffic accidents, 4,137 illnesses, 463 assaults, 518 injuries, 117 child births, 527 routine transportations, and 527 heart attacks. The county has a large number of elderly people and tourists who depend heavily upon the ambulance services.

All of the men, plus those on the fire department rescue squads, have emergency medical technician's training, and the services have hired a training officer to carry on inservice training.

Leon County

The hospital-based ambulance service in Leon County serves the 115,000 persons of the county, of whom 90,000 live within the Tallahassee city limits. The countywide service and equipment is owned by the city and operated by the hospital. The service's deficit is met by the city and county budgets.

The ambulance service responds to 12 to 15 calls each day and operates three vehicles during peak hours. Although the city's two universities have their own ambulances, the service is available to them upon request.

All of the men are registered emergency medical technicians with a basic 148 hours of training and experience. They also receive an additional 100 to 200 hours of continuing education annually in the hospital's inservice education department. When the men are not operating the ambulances, they work in the emergency room. Here they provide the hospital with valuable manpower, allowing the hospital to decrease its staff.

The ambulance service answers all calls, regardless of their nature. Fifty percent of the calls are received through a well publicized telephone number. Others come from direct line to the police and fire department or through the hospital switchboard.

Hillsborough County

Ambulance service in Hillsborough is provided by a private firm, although the fire department has several rescue squads and several funeral homes and volunteer companies provide routine transportation of the sick.

The service is made possible by a contract with Hillsborough Board of County Commissioners and the Hospital and Welfare Board. The commissioners levy a tax for such functions as ambulance services, indigent care and medical examiner.

The Tampa-based service covers the county's 1,100 square miles and over 531,000 population with a shifting zone system.



THE VEHICLE — The 220 ambulance services in Florida use many types of vehicles. They range from station wagons to the more modern modular units and vans. The new state laws concerning emergency vehicles are more stringent.

When an ambulance carries a victim to the hospital, it works its way back zone by zone to its original location as other ambulances answer emergency calls. The areas that have the majority of emergencies are the interstate highways, and indigent, minority and low income areas. The service operates 14 vehicles on the street and answers from 125 to 130 emergencies a day.

All of the ambulance attendants have taken emergency medical technician's courses and in addition received inservice training in defensive driving, protection of legal evidence, and salvage of heart cases. An inservice training officer gives the men advanced medical training. They also spend additional time in the emergency departments of local hospitals. In the near future, instruction in telemetry and cardiovascular resuscitation will be added to the inservice training.

The Division of Health's Role

The role of the Division of Health in emergency medical services has developed over the past 13 years from a note in the 1960 **Annual Report** that stated "there is a growing demand for programs in accident prevention".

Progress continued in 1962 with a sliding glass door study in Dade county, the establishment of poison control centers, a reporting system for snake bites, and a county health department survey of accidents among its personnel and their families. The next year saw the establishment of the Health Mobili-

zation Program, the development of safety conferences, and a campaign promoting the use of seat belts.

The year 1966 saw the developing of the Package Disaster Hospitals and the Medical Self-Help Training Course. An expanded 1965 law gave the Division of Health responsibilities in the field of emergency medical services and this resulted in 1970 of the **State Survey of Emergency Medical Services.** This was the first document describing the extent and quality of emergency medical facilities in Florida. The study included vehicles and equipment, training of personnel, communications and public interest.

Additional studies and regional advisory councils were established in 1971; and the Emergency Medical Services Program was raised to Section status in 1972. This Section is administratively responsible to the chief of the Bureau of Local Health Services who oversees the 67 county health departments in Florida.

Under the 1973 laws, the Division of Health has increased responsibility for

* registration of ambulance operators;
* inspection and permitting of ambulances and operating procedures;
* minimum standards governing ambulance sanitation and maintenance;
* minimum standards for attendant and driver training and qualifications; and
* minimum standards for vehicle design, construction, equipment and supplies.

In addition, the new law protects emergency medical technicians, who are physician-trained, from liability for their acts of mercy and for providing medical care when there is no one around to give consent. However, this law does not relieve the emergency medical technician of gross negligence.

New Protection for You

Almost half a million American men, women and children were killed on the streets and highways of our nation during the past decade. More than 100 million were injured. Millions more suffered heart attacks, strokes, respiratory problems, drownings, burns and various kinds of emergencies.



EMERGENCY CALL— A fire department rescue team gives first aid to the victim of a fight. The police also investigates the fracas.

Perhaps you were one of those who suffered an emergency and survived. Or perhaps you were one who had no accidents. You were lucky! But do you know what kind of medical services you would have received if you had had an emergency?

Florida's 1973 Legislature passed the Emergency Medical Service statutes to protect you in the day when calamity comes your way. It is pleasing to contemplate that when you come face to face with an ambulance attendant in Florida, you will know that he is a professional who knows what he is doing. It will be good to know that the emergency vehicle you will be carried in will have the necessary lifesaving equipment needed to save your life.

The new laws will upgrade emergency medical services that are not up to standards and eliminate those services that refuse to improve. Public support was necessary to get these new laws. Now public support will be necessary to help finance emergency medical services at the local level.

The 1973 laws for emergency medical services are just one more reason why Florida is a pleasant place to live.

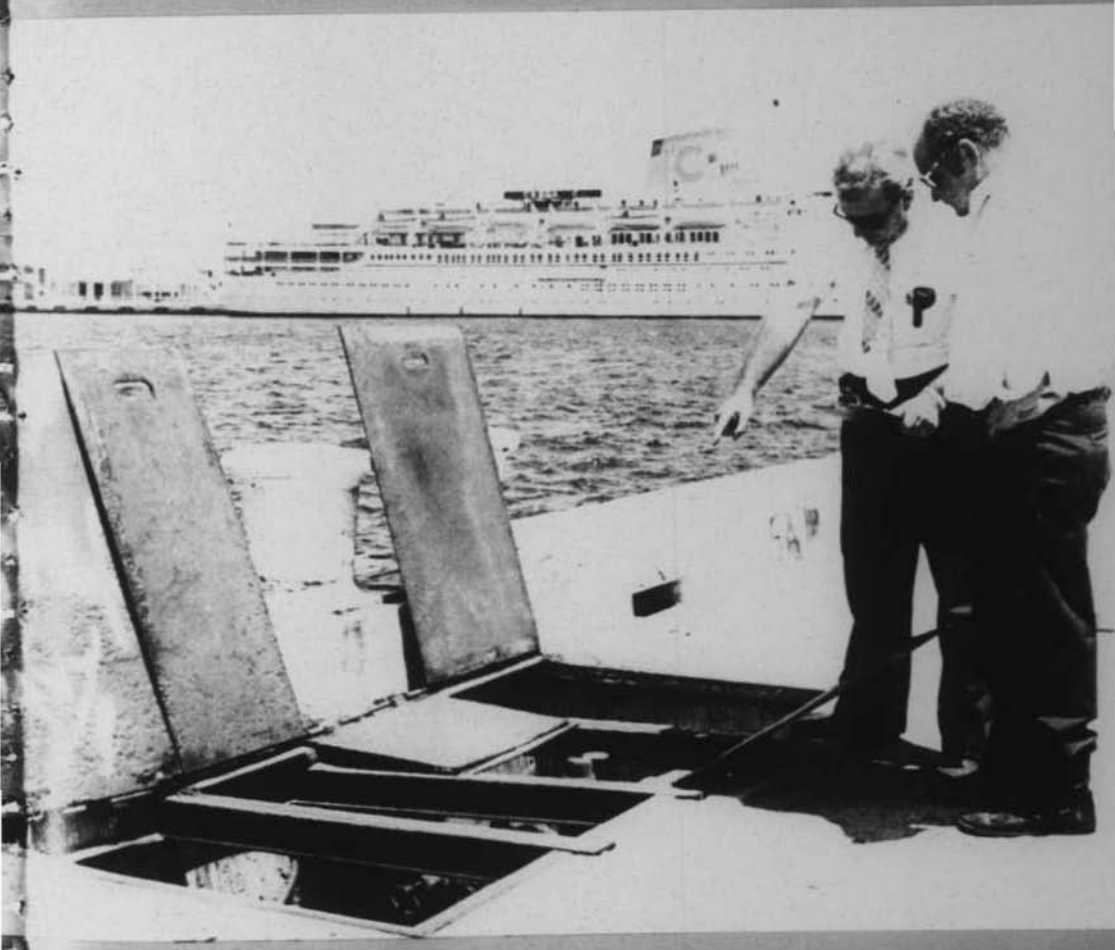
PHOTO CREDITS; Photographs on pages 246 and 249 courtesy of Florida Publishing Company.

US-ISSN-0015-4105

FLORIDA HEALTH NOTES

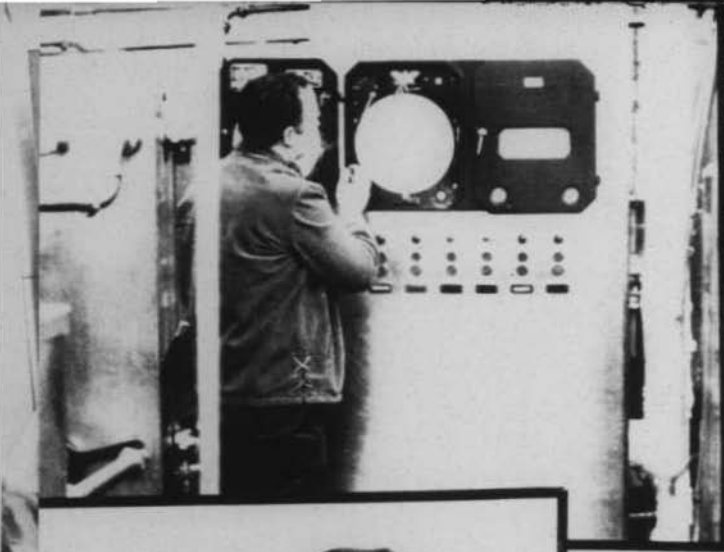
VOLUME 65 — NO. 11

NOVEMBER 1973



THE SANITARIAN - His Services to the Community

FLORIDA STATE LIBRARY







WATER SUPPLY FOR SHIPS (Cover photo) - A sanitarian inspects dockside connections where water is supplied to ships at Port Everglades. This "common carrier" certification program is one of the many ways the sanitarian serves his community.

THE SANITARIANS' BEAT-Dairy plants, trash piles, radiological "accidents," mosquito breeding areas, and food markets are all part of the sanitarians environmental health work.





THE SANITARIAN - His Services to the Community

Florida is growing! Its ever increasing population, expanding industries, thriving tourist business, growing economy are bringing ever increasing loads of environmental health problems. There are dangers of contamination of water supplies, overcrowding in urban areas, indiscriminate trash dumping, unwholesome foods, unsanitary swimming places, animals with rabies.

We don't want to scare you, but these things do happen.

However, there are people in your community responsible for seeing that

* your water is safe to drink;
* restaurant food is wholesome;
* dangerous products are taken off the shelves of stores or are properly labeled;
* bathing places and public swimming pools are safe to use; and
* animals that possibly may have rabies are confined - or destroyed.

These people - known as sanitarians - are on the staff of your county health department to protect you from disease that can spread through the environment. They carry out rules and regulations which promote the healthy environment, conduct investigations and surveys, and supervise sanitary practices relating to many conditions, places and establishments. They not only work under the state laws; they also enforce many federal, county and city ordinances.

The sanitarians work to protect you from dangers and diseases in the environment.

This issue of **Florida Health Notes** will tell you about these men and women, their professional training, how sanitation programs were started, the services performed by the sanitarians on behalf of their communities, and of the state consultants of the Division of Health of the Department of Health and Rehabilitative Services who work with the county health department sanitarians.

THE GOLD COAST - Florida has many areas which cater to its 25 million annual visitors. The county health departments in these resort areas need additional sanitarians to supervise the tourist - related facilities.



Who Is a Sanitarian?

The sanitarian in Florida may come from various walks of life. Some have been schoolteachers; years ago some were retired military personnel or former federal employees. Today 90 percent are college graduates most of whom majored in the sciences - chemistry or biology. The more recently hired graduates have had definitive training in environmental health.

Fourteen county health departments have 10 or more sanitarians. Dade County's Department of Public Health leads with 57 sanitarians; Broward has 39. Others with more than 30 are Duval - Jacksonville, Hillsborough, Palm Beach and Pinellas. Forty - one counties have four sanitarians or less. In addition there are 26 county sanitary engineers and eight other specialists, such as chemists and physicists, who are involved in the field of environmental health.

Published monthly by the Division of Health (Wilson T. Sowder, M.D., M.P.H., Director) of the Florida Department of Health and Rehabilitative Services. Publication office, Box 210, Jacksonville, Florida 32201. Second Class Postage paid at Jacksonville, Florida. Printed since 1892, this publication is for individuals and institutions with an interest in the state's health program. Permission is given to quote any story providing credit is given to the Division of Health.

International Standard Serial Number—US-ISSN-0015-4105

Editor: Robert A. Schoonover, M.A.

Post Office Form 3579 should be mailed to Box 210, Jacksonville, Fla. 32201.



The ideal ratio of county sanitarians to population is one sanitarian to every 12,000 permanent residents. However, the ideal seldom exists and in Florida there are ratios that range up to one sanitarian to 21,000 persons. The state average is not far off the ideal - one sanitarian to 13,504 population.

Florida has approximately 25 million tourists every year who congregate in resort areas of Central and South Florida. These must be taken into consideration and those counties with a high number of visitors must have additional sanitarians to supervise the numerous restaurants and other facilities which cater to the tourists.

Those counties with less than 12,000 population, and there are 15 of them, should have at least one full-time sanitarian. Chapter 154 of *Florida Statutes* says that the basic county health department staff should be composed of a director, who is a doctor of medicine, a public health nurse, a clerk, and a sanitarian. This law was passed in 1931 and it has not been changed material-

ly since that time. Many specialists have been added to county health department staffs, including chemists, dentists, social workers, health educators, statisticians.

The Categories

In every profession there are various classifications. The sanitarians are no different. Classifications range from Sanitarian I and Sanitarian Supervisor to county health department's Sanitation Director III. On the state level are the sanitation consultants who work under the administrator of the Sanitation Section and his assistant.

Sanitarians in the lower categories carry out field investigations and surveys of a wide range of community services, including food sanitation, nursing homes, camps, nuisance abatement, housing, trailer parks, bottled water plants and the field work of Florida's environmental health programs.

Some sanitarians carry out a more specialized environmental program, such as a county-wide food hygiene program, shellfish and crustacea program, milk and milk products, or migrant labor camps.

More experienced sanitarians are supervisors, planners and directors who plan, revise, organize and evaluate the environmental health programs. Those in positions of leadership in the county health departments serve on state environmental committees, testify at legislative hearings, and serve as sanitation consultants to boards of county commissioners.

Continuing Education

Early days of environmental health in Florida were mostly devoted to eradicating mosquito - breeding places, promoting hookworm control with the construction of privies, cleaning up cesspools and sanitary nuisances. The work of the sanitarian today requires him to have even more scientific knowledge about

* bacteria and virus control;
* water supplies;
* training of food service workers;
* conducting surveys of industrial hygiene, radiological health and
* elimination of mosquito-breeding areas.

He has to do more than look at the surface of the health problem; he has to know the dangers involved and how to correct the problems.

Since 1960, a Florida sanitarian is required to have a bachelor of arts or science degree with at least 16 hours in physical or biological science. Once he becomes a sanitarian his education does not stop. He may take the 12-week basic environmental health training course conducted twice yearly at the Division of Health headquarters in Jacksonville. He may also enroll in topical courses of more advanced study in program administration, swimming pools, common carrier, food hygiene, waste disposal, environmental health and sanitary practices.

Correspondence courses offered by the U. S. Public Health Service of the U. S. Department of Health, Education and Welfare, also enhance the education of the sanitarian. Recent courses have been offered in food - borne disease control, water-borne disease control, vector - borne disease control and community hygiene. Other courses offered in the past have been basic mathematics; insect, rodent and vector control; communicable disease control, and environmental sanitation.

The purpose of these inservice, topical and correspondence courses is to expand the current knowledge of the experienced sanitarians.

Sanitarians who wish to hold high level positions in sanitation or environmental health in Florida must be certified by the Florida Sanitarians' Registration Board. This operates under the Florida Department of Professional and Occupational Registration.

The law setting up sanitarian registration was passed in 1959 to upgrade the professional status of the sanitarian and improve his services to the community. Nearly all levels of the state's classifications for sanitarians, as set by the Division of Personnel of the Department of Administration, require that the sanitarians become registered with the Board. Florida was one of the first states to have a sanitarians' registry. Now 36 states have such laws.

Sanitarians are not only located in the Division of Health and county health departments, they are also employed by other state agencies and private industry.

Beginning of Environmental Health Programs

The control of disease through environmental sanitation began with the knowledge that yellow fever was spread by mosquitoes. This led to the development of programs for the removal of breeding places of the yellow fever host, the *Aedes aegypti* mosquito. Then came a broader concern and malaria control was undertaken. The first approach to hookworm was as a medical problem. Later hookworm control became a major task of environmental sanitation. These were the early seeds from which Florida's extensive programs in sanitary engineering, entomology and sanitation developed.

An engineer was added to Florida's early public health team in 1916. "Suppress the Mosquito" was the battle cry and lectures, movies, exhibits, posters and pamphlets informed people of ways to prevent mosquito breeding.

Federal money became available during World War II for the installation of sewage treatment plants and the provision of safe water supplies. There was an increased demand for milk by the Armed Forces. Programs in milk sanitation, certification of milk products and water supplies for common carriers came into being. Environmental sanitation programs were at this time located in the State Board of Health's Bureau of Sanitary Engineering. When food service sanitation was started in 1954, inspections were carried out in the state's 13,700 restaurants. Also added to the **Florida Sanitary Code** at this time were school lunchroom and bedding inspections.

The growth of citrus processing, the phosphate industry and subdivisions produced problems of air and water pollution. Until 1969, these were faced by the old State Board of Health and county health departments. To combat these problems, the number of sewage treatment plants and sewerage systems were increased; efforts were made to combat industrial pollution - both in the water and air. However, in 1969, the air and water pollution and waste water programs were transferred to the Florida Department of Pollution Control.

In 1958, a Division of Sanitation (now Sanitation Section) was formed within the State Board of Health's Bureau of Local Health Services to give better visibility to the sanitation pro-



INTERSTATE HIGHWAY FACILITIES - One special program carried out by state consultants was a survey of eating and drinking places at rural interstate highway interchanges. The results showed frequent violations of food protection practices.

grams. In this section are located the consultants who advise the county health department sanitarians in their work and evaluate the environmental health programs of the state.

One of the first programs added after 1958 was sanitarian inservice training. Several new programs were added to the **Florida Sanitary Code** through the years. These included the handling and distributing of frozen foods, recreational and migrant labor camps, food handlers' training, food sanitation, food processing plants, bottled water, tourist and trailer parks, rendering plants, school sanitation and housing. Common carrier certification began and the Dade County Department of Public Health assigned a sanitarian to devote his full time to airport sanitation activities at the Miami International Airport.

State Consultants

We have told you something about the county health departments' sanitarians. Who sees that the county health departments' 500 sanitarians carry on what resembles uniform programs? The county health departments are requested to have a minimum program in environmental health and there is a need for uniform training and enforcement of regulations throughout the state.

The Sanitation Section has regional consultants who work with local sanitarians county health departments and are avail-

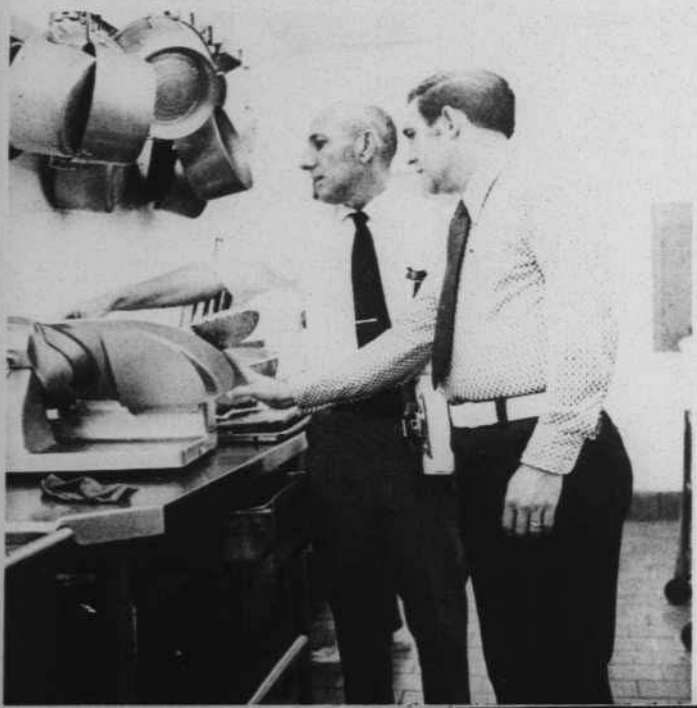
able to help improve the efficiency of the local sanitarian's environmental health program. These consultants have had experience on the local level, have graduate training, and are well versed in environmental health.

In the larger counties, the consultants help with the planning and evaluation of the health departments' programs. In the smaller counties, they assist with the difficult problems, give technical advice, and help the sanitarian with any legal question.

The Sanitation Section also has a consultant who coordinates the sanitarian's training program. He conducts the 12-week basic environmental health course, the food hygiene coordinator's training, and the various types of training for the sanitarians who pass the information on to local people, such as food service workers and supervisors.

When you have a group of 500 professional individuals, there is always movement of people in and out of the county health departments' positions. The state consultants assist the county health departments with recruiting new, qualified sanitarians. There is a continual demand for highly trained environmental specialists.

The consultants not only assist the county health departments with their programs, they help rate them and assist with evaluations. The environmental health programs are constantly being reviewed, expanded or trimmed to fit the needs of the community.



PROTECTION OF FOODS - Sanitarians made some 220,800 visits to Florida's food establishments during 1972. These visits, which included inspections of restaurants' kitchens, were to protect Floridians and visitors from possible food-borne ill - nesses.

Special Programs of the State Consultants

Not only are the state consultants involved in the assisting of the county health departments with their environmental health programs, they are also involved in special projects.

One of the state consultants was appointed by a federal judge to serve on a panel of professionals to survey the prison system in Florida. The sanitation consultant will check the food service, garbage and sewage disposal, water supply, bedding, ventilation, lighting, and general cleanliness of the institutions.

The consultants recently completed a survey of food service facilities at interstate highway interchanges under a contract with the Federal Food and Drug Administration. These facilities were compared with local food service establishments in 33 Florida counties to determine if travelers were encountering establishments with better or worse sanitation ratings than the average Florida citizen and if there was a difference in the administrative procedures and enforcement methods between the interstate and local establishments.

The results of the survey showed that interstate facilities were more frequently in violation of some of the food protection practices than local food service places. In the interstate establishments

* foods were more often not protected from contamination;
* potentially hazardous foods were left out of refrigerators more frequently;
* more foods were improperly stored; and
* more poisonous materials were improperly handled.

Although general housekeeping was a little better and toilet facilities better constructed and cleaner in interstate facilities, rubbish disposal was a problem, floors were dirty and there was a lack of adequate locker space for employees and a lack of ventilation to storage rooms. Local food service places were usually of older construction and had poorer facilities than the newer interstate highway facilities.

Vigorous efforts are being made by food hygiene coordinators and other sanitarians in the county health departments to correct the violations of food protection practices by both interstate highway facilities and local food establishments.

The state consultants who conduct the milk sanitation program are U. S. Public Health Service certified rating officers. They make surveys of 540 dairies and milk producing plants to determine producers and processing plants to be included on the Interstate Milk Shippers list published by the U. S. Public Health Service.

Other programs under the Sanitation Section are:

* bedding inspection program which regulates the trade practices of the bedding industry and requires all labels to be meaningful and truthful;
* the registration of practitioners of the healing arts, including medical doctors, osteopaths, chiropractors, naturopaths, chiropodists and physiotherapists; and
* registration of drug manufacturers, wholesalers and distributors of prescription drugs, licensing of all persons dealing with narcotics, and monitoring drug stores, in cooperation with the Board of Pharmacy, to determine violations of the state and federal drug laws. During 1972, several worthless and hazardous devices were removed from use or sale.

Permit Required

The sanitation programs of the Division of Health are designed for positive environmental control that will protect the health and promote the wellbeing of Florida's citizens and visitors. The state health agency is required by law to issue permits, or licenses, to seven types of business before they may be allowed to operate.

Trailer Parks - There were 4,212 parks in Florida in 1972 with spaces for 230,580 travel trailers or mobile homes. Permits are issued by the state health agency upon the recommendations of the county health department sanitarians who check for location, water supply, fire protection, sewerage systems, size of lots, insect and rodent control, plumbing, animal control, refuse disposal and a number of other factors. Plans or alterations of any trailer park must be approved by the county health department and Division of Health before construction begins.

Food Processing Plants - There were 1,472 such plants in Florida in 1972 that processed all types of foods - from making and wrapping sandwiches to soft drinks and beer. Again the Di-



TRAILER PARKS — Florida's 4,212 mobile home and travel trailer parks were inspected by the county health department sanitarians and issued permits by the Division of Health.

vision of Health issues the permits upon the recommendations of the county health department sanitarians.

Shellfish and Crustacea Plants - Action in this program was carried out on both state and county levels. County health department sanitarians in 29 counties made 1,453 visits to 240 shellfish and crustacea plants. Bureau of Sanitary Engineering personnel certified 179 shellfish shucking, packing and repacking plants, and 104 scallop, clam and crabmeat processing plants. State personnel made 2,275 visits to these places.

Camps - In 1972 there were some 280 migrant labor camps (that housed five or more persons) and 113 recreational camps in Florida. These were licensed by the Division of Health upon the recommendations of the county health departments. Similar to trailer park inspections, the sanitarians checked for drainage of camp sites, adequate shelters, water supplies, garbage and refuse disposal, insect and rodent control, heating, lighting, plumbing, human and solid waste disposal, adequacy of toilet facilities, bathrooms, washrooms, and laundry tubs, food service facilities, bedding and beds.

Bottled Water Plants - The 37 plants that bottled water for sale in Florida in 1972 were licensed by the Division of Health upon the recommendations of the county health department sanitarians. These were checked as to source and quality of water, construction and general housekeeping of buildings, label-



SEPTIC TANKS — A sanitarian discusses with a landowner the location of a septic tank for a new home. The various aspects of the work - the reviewing of plans, inspecting of sites and issuing of permits — take considerable time.

ing of products, cleaning and sanitizing of equipment and bottles, and general health and cleanliness of personnel.

Rendering Plants - Florida's six rendering plants are also licensed by the Division of Health upon the recommendations of the county health department sanitarians who check buildings for construction, lighting, plumbing, disposal of sewage and industrial wastes, water supply, odors, insect and vermin control, care of equipment and utensils, storage and handling of the products. These rendering plants produce grease, tallow, meat and bone meal by-products from the inedible portions of animals or fowls produced by packing houses, butcher shops or abattoirs or from dead animals.

Swimming Pools and Bathing Places - These recreational facilities must be permitted by the Division of Health. The county health department sanitarians assume the responsibility for the overall operations of the 8,033 public swimming pools and 32 natural bathing places in the state, with the assistance of the regional sanitary engineer. Plans and specifications must be submitted to the Bureau of Sanitary Engineering and approved prior to construction. After this is completed, a permit to operate the pool must be obtained annually from the Division of Health. Pools are checked regularly; water samples are taken to see if they are maintained in a proper manner. Sanitarians work closely with the regional sanitary engineer to make biological surveys and pollution surveys of natural bathing places. This is to establish the safety of the area from a health standpoint.

A Wide Range of Programs

The sanitarians are involved in the total environmental health picture of the community. Duties range from answering, investigating and acting on complaints of rubbish-strewn lots to follow-up on dog bites, from supervision of food service places to inspection of school buildings. Following are some of the programs that are part of every county health department's environmental health program:

Food Service - One of the biggest programs is the inspection of the 38,116 food establishments in Florida. County sanitarians made some 220,800 visits to such establishments during 1972. These included 24,002 eating and drinking places, 1,472 food processing plants, 85 abattoirs (slaughter houses), and 1,557 other food establishments.

Because food is one of the most important ways of spreading disease, the sanitarians are especially watchful for the protection of perishable foods - milk and milk products, eggs, meat, poultry,



RELEASED FROM QUARANTINE — This dog, which bit a child, is released from the required 10-day rabies quarantine by the sanitarian.

fish, shellfish, or ingredients capable of supporting rapid and progressive growth of infectious and toxigenic microorganisms.

To improve the state's food hygiene program, the Division of Health has 58 food hygiene coordinators who cover the 67 counties. Each coordinator is trained in the techniques of inspection, enforcement procedures, food-borne disease investigation, records and program operations, and code interpretation. After successfully passing a written examination, each of the coordinators participate in a field standardization exercise with the training instructor who rates each man according to his performance. If he successfully completed all phases, the food coordinator is issued a certificate. In order to renew this in three years, he must go through a seminar, an evaluation of his program, and a refresher course with additional field training.

Some county health departments have obtained local legislation or ordinances that require food establishments to meet certain standards in order to be licensed by the county health departments and the local licensing agency. In some counties the county health departments can close food service places if they can determine a health hazard exists. The local health departments are also required to approve any construction or major renovations of food establishments.

Training of Food Service Workers - Nearly half of the county health departments have training courses for food service workers. Some 9,700 were trained in Florida in 1972. A few counties require that managers and supervisors successfully complete a course in food hygiene and tie this into the requirements for licensing the establishment.

Product Safety - Operating under Chapter 501, *Florida Statutes,* this program provides for the removal from the market place products or articles hazardous or harmful to the consumer. It requires close liaison between the county health department sanitarian, the Division of Health, and federal officers who are responsible for enforcing the Federal Hazardous Substance Law. The county health departments are advised by the Sanitation Section of products that have been declared hazardous and such products are ordered removed from sale by the counties. The sanitarians also report to the Sanitation Section articles or products they find in the markets which they believe to be in violation of the statute. Children's toys, particularly those made in

foreign countries, and food or drug products are the ones most often removed.

Common Carrier Certification - The Division of Health has a cooperative agreement with the federal government to supervise establishments that place food and water aboard aircraft, railroad trains, steamships and buses. The agreement also includes means for handling and disposing of solid and liquid wastes from these commercial carriers. Sanitarians from the county health departments make periodic inspections at seaports and airports and report their findings to the Division of Health. This serves as the health agency's semi-annual recommendation to the federal government. Recent contractual agreements between the Division of Health and the Federal Food and Drug Administration will increase activities in this growing field.

Schools - School health and sanitation are the joint responsibility of the Division of Health and the State Department of Education. Inspections are made by county health department sanitarians to assist the school districts in maintaining a safe and healthy environment for schoolchildren. Inspections include checking the illumination of classrooms, adequacy and cleanliness of toilets, rodent and insect control, safety features, and general housekeeping of buildings and grounds. These inspections are in addition to the school lunchroom inspections which are considered part of the county health departments' food sanitation program.

Private Water Supplies - A private water supply is defined as one serving less than 25 persons, but in practice, it is usually one serving a single home or establishment. Sanitarians are responsible for setting the location for all new wells, for seeing that wells are adequately protected from nearby septic tanks, and for securing necessary bacteriological and chemical tests.

Public Water Supplies - The Division of Health's Bureau of Sanitary Engineering and regional sanitary engineers are responsible for approving plans for public water supplies. County health department sanitarians maintain close liaison with regional engineers, keep them informed of all planned or contemplated water supply construction, and inform them of the operational status of all public water plants or any problems that may arise in their operations.

Milk and Milk Products - Milk protection is considered a basic program. Sanitarians in the county health departments

work closely with the milk consultants in the evaluation of dairy farms and milk processing plants. Periodic samples are taken from the dairies, tank trucks, processing plants, milk trucks and stores and tested for purity. All milk must meet state and federal standards. The sanitarians maintain close liaison with agents of other state and federal agencies.

Rabies and Animal Control - All county health departments are responsible for following up dog bites under the rabies control program. Many cities and counties have passed local leash laws that restrict animals and in some instances the health departments are given supervisory control of these programs. Considerable efforts are spent in tracking down animals who bite people and seeing that they are quarantined for a period of time. Some county health departments have the responsibility for the operation of the animal pound and/or the rounding up of stray animals. In many counties this latter operation may be under the board of county commissioners but the sanitarian works closely with the men in charge of this program.

Nursing Homes - The county health departments have the basic responsibility to see that plans and specifications for new nursing homes, additions or extensive renovations are submitted to the Division of Health's Bureau of Health Facilities for approval. Public health nurses and sanitarians are responsible for making periodical inspections of nursing homes, hospitals and



PASSING THE TIME-OF-DAY — The sanitarian greets a couple of residents of a nursing home during his routine visit.

related facilities for general housekeeping, patient care, records keeping, drug storage. The food service of these facilities come under the routine supervision of the sanitarians' food sanitation program.

Public Buildings - County health department sanitarians may check public buildings - gasoline stations, bus stations, county, federal or state buildings - when they receive a complaint about unsanitary restrooms or health hazards. This is done under the legal responsibilities given the state health agency to protect the public health. Food service places in these buildings come under the food sanitation programs.

Septic Tanks - The Division of Health and county health departments are back in the septic tank inspection and permitting business after the program was operated by the Department of Pollution Control for a year. Some county health departments continued to issue septic tank permits under a contract between the boards of county commissioners and the Department of Pollution Control. In most counties, contractors cannot get building permits without county health department approval. This included approval of plans, location of septic tanks in relation to existing tanks and wells, and inspection for proper installation. Because much of the better land in some counties has already been used, people are wanting to install septic tanks in sub-standard soil where poor drainage and population density create problems.

Shellfish Production - The county health department sanitarians have the responsibility for checking the water and beds from which all shellfish are harvested, and for inspection of shucking plants and equipment to insure that sanitary requirements are complied with at all times. When pollution surveys are needed, the sanitarians work closely with regional sanitary engineers and the Division of Health's Bureau of Laboratories to see that samples are gathered and tests run. County health departments are also responsible for making inspections of facilities asking for permits for shellfish harvesting and shucking. These permits are issued by the Bureau of Sanitary Engineering.

Sanitary Nuisances - The recording, investigating and handling of nuisance complaints consume a large portion of the sanitarians' time. This is an important public relations function and the successful conclusion of one complaint may mean the

comfort and health of a number of individuals and the winning of friends for the county health department. Complete information regarding the complaint is obtained; a prompt investigation made; and a detailed inspection made on each complaint. A proper course of correction is suggested to the person or persons responsible for the offense and sufficient time allowed for the correction to be made. Legal action to secure correction may be instituted by the county health director under local laws or ordinances, or under state laws, or the **Administrative Code** of the Division of Health. Legal action is used only as the last means of obtaining correction of an unhealthy situation.

Programs Under Local Laws

In addition to those programs listed above which are generally carried on by all county health units, there are additional programs carried on by some health departments under local laws or ordinances. These are not specifically part of the statewide minimum sanitation program.

Child Care Centers - A number of counties have local laws or ordinances giving the county health department the responsibility for upgrading and inspecting child day care centers. Where child care centers are inspected and licensed, the buildings are well constructed and located in proper neighborhoods; playgrounds are fenced and safe; rooms are kept clean; foods are of proper nutritional quality; sanitary facilities and water supplies are adequate and safe; and the centers are properly staffed. Regardless of the existence of local ordinances, food service facilities at all child day care centers are checked routinely by the local sanitarians.

In many counties, the sanitarians also check foster homes when requested by the Division of Family Services of the Department of Health and Rehabilitative Services and private placement agencies. These homes are inspected for general cleanliness, adequate facilities and many other aspects of environmental health.

Housing - Some counties and cities of Florida have minimum housing codes and the sanitarians are active in housing inspections or surveys. Frequently these are limited to inspections



CHILD DAY CARE CENTERS - The sanitarian discusses the safety of a toy with a staff member of a child day care center.

under other programs - water supply, premise sanitation and nuisance control.

Rodent Control - The successful rodent control programs have occurred because of local rodent control laws. When sanitarians make inspections of homes and businesses, they can detect rat harborage and suggest proper measures to the homeowner on how to eliminate rats and mice. Most local programs issue rat poison to homeowners without costs.

Mosquito Control - Many county health units are charged with the responsibility for the operation of mosquito control programs, or for furnishing various supportive services in conjunction with programs operated by other local agencies.

Plumbing - Some county health departments have been designated to carry out the functions of plumbing inspection within their given jurisdictions.

Special Environmental Health Projects

From time to time special environmental health programs have been conducted in Florida that combined the forces of public health and the communities in promoting better planning, housing, water supplies, recreational and sanitation facili-

ties; improved abatement of water and air pollution, superior solid and liquid collection and disposal methods.

Since 1965, there have been environmental health studies carried on in Gainesville, Brevard County and Manatee and Sarasota Counties. In the latter two counties, the project was known as Manasota-88. While progress has been made in both the Gainesville and Brevard projects, the Manasota-88 Project is unique in that it was carefully planned to provide for implementation over a 20-year period.

Much progress was made in the first two years of the project:

* A minimum housing code was passed by Manatee County. (Bradenton and the City of Sarasota already had such codes.)
* Manatee County developed county-wide sewerage and public water supply systems. Sarasota County franchised out its water systems and now is buying water in large quantities from the Manatee Reservoir.
* A complete air pollution control laboratory has been developed
* Mandatory garbage pick-up ordinances were passed in both counties,
* New recreational facilities, including improved beaches, were developed in the counties.
* Air from a phosphate plant, Polk County, and automobiles began to be monitored.
* A noise pollution abatement program was started.



LABORATORY - This air pollution control laboratory resulted from progress made by the Manasota - 88 Project.

Improvement continues in this the seventh year of Project Manasota-88.

Similar Problems

As previously noted, there are different sizes of county health departments. There is also a difference between the operations of the larger and middle size counties and the one-man sanitation department of the small counties.

Although their operations may be different, all of the county health departments have similar problems - food service establishments, indiscriminate dumping of garbage and trash, sewage disposal and septic tank installations, and a multitude of nuisance complaints.

The directors of environmental health in larger and middle-size county health departments frequently have similar methods of staffing and assigning duties. They usually have from three to five men working exclusively on food service establishments under the direction of a food hygiene coordinator. They have from one to three men assigned to septic tank inspection and licensing. One or more men are assigned to inspection of foster homes, day care centers, nursing homes and emergency medical service (inspection of ambulances). Another man is usually assigned to milk programs (in those counties with large milk producing and processing programs). Another is assigned to mobile home parks and migrant labor and recreational camps. The remainder of the sanitarians are usually assigned to general sanitation work.

Solving the Problems

Problems that the sanitarians find in the community are limitless. It is up to them to solve these problems. When they inspect a school, jail, nursing home, they look at the food service, cleanliness, lighting, ventilation, disposal of solid and liquid wastes, the purity of water supply, rodent and insect control, storage of food and supplies, adequacy of toilet facilities, construction of buildings and general housekeeping. The sanitarians must persuade the managers and owners of these places - whether they be individuals, corporations or local or state government agencies - that any violation of the **Florida Administrative Code** must be corrected.

The inspections carried out by one county health department after schools closed in June 1973, revealed, among other things, evidence of rat and roach infestation, the school cafeterias did not have sneeze guards on their serving lines, lack of thermometers in cafeteria refrigerators, improper storage and sanitary condition of single service items. The lighting in 35 percent of the county's schools was found to be insufficient. The director of the county health department's Environmental Health Division and his staff met with the school authorities to assist in correcting the deficiencies.

Food poisoning is always a problem. In one county, twelve persons became ill after eating coconut cream pie purchased from a local bakery.

* Five persons who had attended a cook-out where a pie was consumed along with hamburger, bread, cabbage salad, carrot and raisin salad, potato salad, beet-olive and onion salad and deviled eggs, became ill.
* Two women, who on the same day had purchased a coconut cream pie, became ill within two to three hours.
* A family, consisting of four members and a baby-sitter, became ill after eating a coconut cream pie from the same bakery.

Fortunately, a sample of the pie was obtained and sent to the Tampa Regional Laboratory where it was found to have a high coliform count. An inspection of the bakery disclosed generally cluttered conditions, improper storage of perishable foods, and unclean equipment.

Every county health department receives complaints for everything ranging from overflowing septic tanks, uncollected garbage, stray animals and trash-strewn lots to biting insects, uncut weeds, and quarreling neighbors. Sometimes the answers to these complaints do not come under the jurisdiction of the county health department. But the sanitarians either pass the request on to the proper agency, obtain an answer to the complaint, or correct the situation.

The One-Sanitarian County

Twenty-three of Florida's county health departments have a single sanitarian. The key to the one-sanitarian operation is

cooperation and planning with other local agencies and working together to get things done. For example, Joe B., the sanitarian in one small county with a population of 8,000 takes his responsibilities as a county leader seriously. He participates in fund drives, acts as chairman of the local chapter of the American Red Cross, works with the county health director in budget planning, and serves as liaison with the Board of County Commissioners and participates in many civic activities.

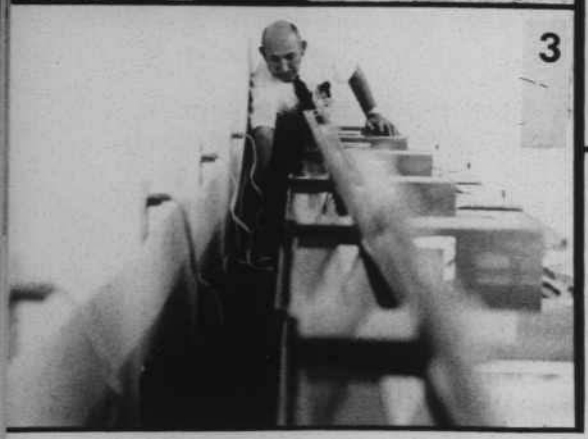
Routine duties include:

* operating mosquito traps for the Division of Health's Bureau of Entomology to determine the types and densities of mosquitoes;
* conducting routine environmental health evaluations of hospitals, nursing homes, jails, food service establishments as the county's food hygiene coordinator. (There are 45 eating and drinking places in the county.)
* supervising sanitary aspects of public water supplies. (There are 25 public water systems in the county, including those of motels, schools and three communities.)
* managing annual animal immunization clinics for the protection of people and pets against rabies. (The number of immunized pets in the county is growing.)
* conducting ambulance service inspections for Emergency Medical Services;
* managing swimming pool sanitation and safety programs;
* making foster home surveys;
* investigating and documenting food-borne disease outbreaks;
* checking trailer parks. (There are 21 mobile home and travel trailer parks in the county.)
* making routine surveys of the county's three food processing plants;
* training local food service workers in cooperation with the Division of Health consultants and other counties; and
* cooperating with other local agencies as an interagency planning committee. (This committee recommended a plan for a county-wide system of solid waste pick-up and disposal.)

Mr. B. also acts as a clearing house for complaints. This is one of the trademarks of the county health department. He says







A MAN FOR ALL PROGRAMS- In the one - sanitarian county health department, the sanitarian carries out all of the environmental health activities. Included in his work is (1) checking the drain field of a septic tank installation; (2) testing the water of a motel's swimming pool and (3) inspecting the plumbing of the laundry facilities in a travel trailer park.

that approximately 50 percent of the complaints are not health related, but since he is located in a small county where there are few agencies to help work out people's problems, he tries to fill the void. He feels that by helping people resolve their complaints, he is building good public relations and citizen support for the health agencies.

Florida's 500 Sanitarians

Florida is growing! And this growth is producing problems in environmental health. When people gather together in cities, or travel in large numbers - as along the interstate highways, the environment is endangered.

Florida's 500 sanitarians - located in the Division of Health and its partners, the county health departments - are working to protect you from the diseases and dangers of the environment. These are the services of the sanitarian to his community.

US-ISSN-0015-4105

FLORIDA HEALTH NOTES

VOLUME 65 - NO. 12

DECEMBER 1973



The Expanding Role of the PUBLIC HEALTH NURSE



FOR BETTER HEALTH (Cover photo) - A certified nurse - midwife, located in a county health department clinic, discusses a pamphlet on child rearing with two young mothers.

'I HEAR IT' - An expectant mother smiles as she listens to the heart beat of her unborn baby. The certified nurse - midwife gives prenatal and postpartum care, plus family planning services.

The Expanding Role of the PUBLIC HEALTH NURSE

Vignettes of Life

Mrs. Marcy was in the delivery room of the local hospital. She was being attended by Mrs. Wright, a certified nurse-midwife, who had supervised her pregnancy almost since its beginning. Now she was about to be delivered of her baby. All indications were that it would be a normal birth. Mrs. Wright would deliver the baby. If complications were to develop, an obstetrician would be called in on the case.

"You're doing fine. Remember those short breaths we practiced. Keep them up . . . That's fine - you have to be ready to push. That's it. It won't be long now."

* * * *

Roger, age one year, was due for his examination at the county health department clinic. Mrs. Kay, the pediatric nurse practitioner, was telling his mother that he was in good health, developing normally. If he had shown any deviations from normal development or signs of disease, she would refer him to the clinic physician.

"He's certainly an active youngster. Does he eat all of his food at meal time? Good! Perhaps it would be good to start him on foods that need more chewing. How is his toilet training coming?"

* * * *

Mrs. Anders, a newly-married teenager, had an appointment with the family planning nurse specialist. She came into the county health department waiting room, which was uncrowded. Her initial interview with the nurse was relaxed and pleasant. Mrs. Jones, the family planning nurse specialist, performed the routine examination.

"Is this your first pelvic examination? There's nothing to it. Just relax and let yourself go. I'll insert this instrument. It may be a little cool . . . but now just relax - like a rag doll . . . that's right . . . now we'll take a Pap smear . . ."

* * * *

The Charter family was at the clinic to see their friend, Mrs. Henry, the family nurse practitioner. She examined each of the family members for symptoms of illness and gave the needed immunizations. Mrs. Charter asked, "How can I get Richard and Mary to eat better? They just nibble." Mrs. Henry suggested ways of making foods more appetizing. Grandmother Charter discussed her aches and pains with the public health nurse specialist and whether she should see the doctor.

"You say you're in pain right here? It's worse sometimes? And you can't keep your food down? Do you have a bitter taste in your mouth?"

* * * *

These little bits of life can show you how the public health nurse relates to her patients. The nurse-midwife, pediatric nurse, and other specialists in public health nursing are new and important roles for Florida's public health and other nurses.

Nursing is the largest health care service given by professionals in Florida. The public health nurses play a major role in providing this aspect of health care in people's homes and clinics. Of the more than 4,000 employees of the county health departments and Division of Health of the Department of Health and Rehabilitative Services, 25.5 percent, or more than one out of every four persons, is a public health nurse. This is a total of more than 1,000.

Published monthly by the Division of Health (Wilson T. Sowder, M.D., M.P.H., Director) of the Florida Department of Health and Rehabilitative Services. Publication office, Box 210, Jacksonville, Florida 32201. Second Class Postage paid at Jacksonville, Florida. Printed since 1892, this publication is for individuals and institutions with an interest in the state's health program. Permission is given to quote any story providing credit is given to the Division of Health.

International Standard Serial Number—US-ISSN-0015-4105

Editor: Robert A. Schoonover, M.A.

Post Office Form 3579 should be mailed to Box 210, Jacksonville, Fla. 32201.

Nurses are taught to be concerned about their patients. They are trained in interviewing and counseling. They are able to take time to respond to the moods and lives of their patients. Despite the growth of science and the importance of expanding knowledge, nurses have not lost the service aspects of their profession. One nursing leader defined nursing as ". . . science and a talent for mercy."

The role of the public health nurse is changing in Florida. Those in the profession are re-examining their services and redefining their tasks and required skills. In the future, the services of the certified nurse-midwives, and other nursing specialists will become more available through the county health departments. Right now the number is limited, but these few nurses are reminders of the changing emphasis of public health nursing. The main reason for these specialists is to meet in a better way the health care needs of Florida's expanding population.

The nurse specialists work under written medical protocol, or guidelines, that have been agreed upon by their nursing director and the responsible physician. The guidelines help the nurses to judge what needs to be done in those cases where there are abnormal developments.

This issue of **Florida Health Notes** will tell you about public health nurses, the history and background of present day nursing practices, the reasons for the changes in the nursing profession, the work of the specialists, and the components of the comprehensive health care team. We will also discuss home health aides— the extended "arm" of the public health nurses.

Days of Gods and Priests

From the beginning of time, diseases and their cures were closely related to the gods. The sick were thought to be victims of a superhuman malevolence - divine or diabolic - and good health was considered a miracle. Because it was believed that man's skills could avail little against the powers of devils, it was natural that physicians and nurses did not exist. When medical practices did evolve in ancient times, they were under the control of the priests. This was universal through all of the ancient civilizations.



MEDIEVAL HOSPITAL - A 16th Century woodcut of a ward in the Hotel - Dieu of Paris shows nuns (left) attending the sick and sewing shrouds, and a priest (right) serving the Eucharist to a patient.

When Pharoah Tutankhamen was ill in the 14th Century, B. C., he went to the Temple of Imhotep where he participated in an "incubation" - a custom of passing the night in the god's temple with the hope of obtaining, in a dream, some advice as to treatment. The Temple of Imhotep is reported to have many halls and annexes, some of which served for incubations and clinics. The priests and patients would tarry for a number of nights waiting for the revelation. Whatever treatment was given was carried out by the priests.

In those ancient civilizations, the practice of medicine was considered a political matter. The caring for the sick was the work of slaves and women and was regarded as of little importance. More menial still, was the work of the many midwives who cared for pregnant women and their offsprings. Regardless, the treatment of the sick, pregnancies, and such illnesses as

leprosy, was described in many ancient writings. In India, the attitudes and deportment of the male attendants was described in the religious **Samhita** manuscripts. Similar instructions were given to the Hebrew nation in many books of the Old Testament.

During the periods of the Greeks and Romans, nursing was considered the work of low ranking persons. Frequently, there were slaves especially trained to care for the sick. With the start of the Christian era, men and women began following Jesus' call to charity, love and service to one's neighbor. He said, "I was sick and ye took care of me . . ." (Matthew 25:36). The duties of caring for the sick was raised to a higher plane and became a sacred vocation. Empresses and queens would tend the bedridden, taking them food, washing their cups, doing menial tasks as acts of repentance.

The care of the sick and aged during the Middle Ages evolved into the work of religious orders to prevent the plundering of hospitals and the poor by civil authorities. But the practice of medicine and the healing arts of nursing became locked up in the monasteries and nunneries. There were few trained attendants in the infirmaries and the sick mostly had to look after each other.

A change came in the operating of hospitals in the 16th Century when England's King Henry VIII dissolved the monasteries. This led to the collapse of the monastic system of philanthropy. The hospitals came under civilian control. Lay nursing groups developed. Because there were no nurses, as such, in England, the care of the sick became more and more defective. In other parts of Europe, religious orders continued to care for the sick and a century later, it was from some of these religious orders that Florence Nightingale, the founder of modern nursing education and nursing practice, was to draw inspiration.

A Change from Sarah Gamp

Nursing in England deteriorated until in the early 19th Century there were demands for reform. One of the most influential champions was neither a doctor nor a nurse, but the novelist, Charles Dickens, who wrote about Mrs. Sarah Gamp and

Mrs. Betsy Prig, archetypes of the professional nurses of the period - ignorant, greedy, callous - a contrast to the nursing profession of today.

The Crimean War of 1854-56 was the turning point in nursing. An English gentlewoman, who was interested and trained in the nursing of the sick and had a fine sense of organization, heard about conditions in the Crimea and aroused the enthusiasm of the English people for reforms in the healing arts. When Florence Nightingale arrived in the Crimea, she found

* a deplorable condition among ill and injured troops;
* hospitals with no surgeons;
* a lack of nurses; and
* a shortage and misuse of supplies.

The state of the hospitals would have been disheartening to a less ardent spirit but she reorganized the hospitals, cleaned up the environment, started special kitchens, and provided recreational and reading rooms. She fought red tape, bureauracy and official apathy.

Her administrative ability and prolific writings reformed nurses' training, the practice of nursing, administration of hospitals, and nursing discipline. From the outset, Florence Nightingale impressed upon her nurses that they were "trained to train," and their special functions were to be leaders and pioneers.

Three Public Health Nurses - The Beginning

Public health nursing in the United States developed from the work of religious sisterhoods in hospitals of the early 19th Century. Attempts to provide nursing care in the homes of the poor occurred first in Charleston, South Carolina, in 1813 and then in Philadelphia in 1839. But the first successful and permanent progress started in New York City in 1877 and spread rapidly to other parts of the country. Visiting nurses and "district" nurses not only gave treatment, but instruction on home nursing and health care. These are the same aims of public health nursing today.

Florida's public health nursing program started when three nurses were hired in 1914 by Dr. Joseph Y. Porter, the first state health officer. This was in lieu of tuberculosis hospitals which he had been denied by the State Legislature. Two years later the number of nurses had grown to 13. Although they were employed to work with tuberculosis patients, they saw other needs and expanded their duties. This was the earliest record of public health nurses in Florida.

The duties of the public health nurses grew. In 1915 the Florida Legislature passed a law calling for the inspection of schoolchildren. But there were not enough public health nurses to carry out the work. Maternal and child health care were among the earliest duties. During the 1920's the few public health nurses were spread quite sparsely over the state. One nurse was responsible for the nursing care in a number of counties. To assist expectant mothers, a series of letters were inaugurated - one set for those mothers who were expecting to be delivered by a physician, and a modified series for those expecting to use a midwife.

In 1926, the Bureau of Child Welfare (in the old State Board of Health - now Division of Health) became the Bureau of Child Welfare and Public Health Nursing. In 1932, it was renamed "Division of Public Health Nursing," which was more descriptive of its functions. Since the state government's reorganization in 1969, it is the Public Health Nursing Section.

Duties which developed over the years (but not all inclusive) were

* supervision of granny midwives and school health;
* venereal disease and tuberculosis nursing;
* immunization and communicable disease control;
* home visits for the chronically ill;
* maternal health and child health;
* assistance for premature babies, the mentally retarded, migrant mothers and children;
* family planning; and
* various screening procedures, such as hearing, vision, phenylketonuria, tuberculin testing, sickle cell, certain anemia, intestinal parasites, heart and high blood pressure, uterine cancer and other screening programs.

Today in Public Health Nursing

Today's public health nursing skills are the results of years of practice and customs. Public health nursing is different from the original concept of nursing in that it is basically an organized community health service. It provides family centered service (as different from hospital service). It is interwoven with the services of other professional and allied workers who have similar goals and involves participation in community organizations for health action.

Public health nurses provide approximately 90 percent of all personal health services within public health agencies. They go into homes, schools and clinics where they supervise maternity patients and their infants, schoolchildren, the chronically ill, the aged. They give supervision to home health aides, and the relatively few "granny midwives" who still practice in Florida.

While giving care and treatment in the clinic and doing bedside nursing in the patient's home, the public health nurse's

---

EARLY EDUCATION - A Florida public health nurse of several decades ago prepares to conduct a class in infant care. Maternal and infant health programs are two of the basic nursing services given over the years.



primary role is education of the patient and his family to take care of their own health needs. Her work includes teaching pregnant women to take care of themselves, doing follow-up visits to children with physical or mental defects whom she found in her school visits, seeing a person who has tuberculosis and is under treatment at home (once the patient would have gone to a tuberculosis hospital), contacting families to help them prepare for the return of a relative from a state mental hospital. Her duties go on . . and on . . and on . .

One public health nurse, in a day's work, will

* visit a new mother and her baby, evaluate the situation and recommend a visit to the public health clinic;
* visit a pregnant woman and a crippled child;
* contact a teacher about several cases of measles in her class and discuss the teacher's concern for children who fail to eat their lunches;
* examine and bandage a wounded finger in the school's health room;
* visit a tuberculosis patient who is under treatment at home and needs encouragement to take his special medicine;
* visit a stroke patient to help his wife learn to care for him; and
* end the day with a talk before a woman's club about breast and self-examination.

The Changing Role of the Public Health Nurse

The role of the public health nurse is changing because of a parallel development in medicine and public health. The rapid advance of bio-medical knowledge in the last few decades has created much broader horizons for all health professionals and made the public they serve more aware of what to expect in the way of health services. Public health nurses have to advise heart patients with pacemakers and persons on kidney dialysis machines on how to live with their new machines and watch for any deterioration of the situation.

Many of the our earlier public health problems have been brought under control through immunizations and improved sani-

tation, as well as through advanced medical care. The public health nurse is in a unique position to help families and individuals accept greater responsibilities for their own health. She meets families in the course of a day's work when life's situations - such as births, school entrances, adolescense, marriage, parenthood, illness and aging - cause varying degrees of stress and anxieties.

Once nursing was solely concerned with the sick. A modern definition of public health nursing practice is: The providing of nursing service directly to patients and members of his family - meaning any person, well or sick - who is receiving the services of a professional provider of health care - for promoting, maintaining, or restoring health or minimizing the consequences of illness.

Today's health services are often given through the team approach. In order to provide health services as effective members of this health care team, nurses are called upon to carry out a wide range of tasks, often under the general direction of a physician, but frequently without close supervision. Many times the nurses have the assistance of other health professionals who look to them for guidance.

For example, the nurses have the responsibility for the safe and prudent administration of medicines and the carrying out of treatment prescribed by a physician. They are responsible for the maintenance of patient's records, and monitoring the condition of the patients. They play a major part in the interpretation of treatment and seeing that it is carried out.

The Three Phases of Nursing Care

Nursing care may be put into three categories: primary, acute and long-term care. All of these have their place in the public health nursing picture. Over the centuries nursing and medicine have joined in varied, but often poorly-defined relationships ranging from close collaboration to outright independence. One of the most important opportunities for changes in the current system of health care involves altering the practice of nurses and physicians so that nurses assume considerably greater responsibility for delivering primary health care.

Primary care has two dimensions:

* The first contact of a sick person with the health care system that leads to a decision of what must be done to help him solve his problem; and

* the responsibility for the continuity of care, for example, the maintenance of health, the diagnosis of symptoms, the evaluation, treatment, and/or referrals to the appropriate agency.

Acute care consists of service for those illnesses or phases of illnesses of a short duration. It has as its purpose the restoration of normal life processes and functions. Hospitalization is frequently required for these serious illnesses. Public health nurses are often involved in episodes of acute illness in patients requiring long-term nursing care for heart disease, stroke, cancer, or chronic illnesses.

Long term care consists of service designed to provide treatment and rehabilitation for the improvement and/or maintenance of health. This care is for patients of all age groups in many different health settings - at home, in clinics, or rehabilitative centers.

The nurses in public health function relatively independently in patients' homes, in rural and ghetto areas, and more recently in clinics and community care centers. Under only general guidance of physicians they have

* assessed problems of individuals and families;
* given immunization injections;
* treated minor illnesses;
* followed-up on medications of chronic illnesses;
* referred patients for differential medical diagnosis;
* arranged for referrals to social agencies and other organizations;
* given advice and counsel to promote health and prevent illnesses;
* supervised health care of normal pregnant women and children; and
* worked with health-related community action programs.

As health care becomes increasingly valued in our society, nurses will be expected to take more responsibility for the delivery of primary health and nursing care, for coordinating and initiating preventive services, for initiating or participating in diagnostic screenings, and for referring patients who require medical diagnosis and treatment therapies.

Functions of the Public Health Nurse

The present role of the public health nurse extends from routine talks to advanced professional techniques. It embraces teaching people about themselves and about how to maintain their health. The public health nurse's role plays a significant part in expanding health care to Floridians who demand and expect it. These demands impose an ever-increasing burden on the present health care delivery system.

There are certain functions for which nurses are generally responsible in primary health care. Public health nurses are involved in case-finding and medical referrals. These activities are carried out by nurses in patients' homes, community clinics, schools, industrial settings, and through the identification of ills—actual and impending.

Certain primary functions are shared by the public health nurse and physicians. These include:

* health surveillance of pregnant and post-partum women, well-babies and children, patients discharged from hospitals and nursing homes, home-bound invalids, and persons in rest and nursing homes;

* evaluation of deviations from "normal" in patients who present themselves for treatment; and

* assessment of the responses of patients to illness and of their compliance with and response to prescribed treatment.

Primary care functions for which many public health nurses are being prepared and which are part of their expanding role, include:



PATIENT'S RECORDS - A patient's health history is an important part of the health care process.

---

* instituting of care during normal pregnancies and normal deliveries, providing of family planning services, and supervising of health care for normal children;
* managing of care for selected patients within guidelines mutually agreed upon by nursing and medical personnel, including the prescribing and providing of care and making proper referrals as needed;
* screening patients who have problems requiring definitive medical diagnoses and medical treatments;
* making physical and psychosocial assessments, recognizing the range of "normal" and the manifestations of common abnormalities;
* conducting nursing clinics for continuing care of selected patients; and

* conducting community clinics for case finding and screening for health problems.

Within guidelines agreed upon by medical and nursing authorities, the public health nurses may be able to make adjustments in medications, to initiate requests for certain laboratory tests and interpret them, to make judgments about the use of accepted drugs as standard treatment in diagnosed conditions, to assume primary responsibility for determining possible alternative settings for care in a skilled nursing home or in the patient's home, and for initiating referrals.

Some of the nursing functions which public health nurses are generally responsible for in acute health care conditions include: recognition of such symptoms as acute heart, renal failure, insulin shock and hemorrhages. They are able to provide emergency treatment in cases such as cardiac arrest, convulsions and poisonings.

Functions in acute care for which public health nurses are now being prepared include:

* securing and recording patient's history and making a critical evaluation of such records necessary to planning and carrying out treatment in collaboration with other medical and health professionals;

1914-1974 — 60 Years of Public Health Nursing

The year - 1974 - will mark 60 years of public health nursing in Florida. According to the 1914 **Annual Report** of the State Board of Health, the first "visiting nurse" was hired in April of that year to visit tuberculosis patients in the 17-county Western District. In October, two other nurses, called "sociological workers," were hired to visit patients in the 24-county Central District and the nine-county South District. The City of Jacksonville was not included as it had a nurse of its own.

* performing basic physical and psychosocial assessments and translating them into appropriate nursing care;

* discriminating between normal and abnormal findings in physical and psychosocial assessments and reporting these findings to physicians with appropriate recommendations; and

* initiating action within guidelines developed by medical and nursing personnel, such as making adjustments in medicine, ordering and interpreting certain laboratory tests, and prescribing certain rehabilitative and restorative measures.

Long-term nursing care functions for which public health nurses are generally responsible include:

* giving treatment, rehabilitative exercises, and medications prescribed by the physician;

* teaching the patient, members of his family, or both, to give treatment or medications when needed;

* teaching patients and his family members to carry out the medical plans for special diets, taking into consideration cultural backgrounds, personal preferences and financial status;

* observing and evaluating patient's physical and emotional conditions and reactions to drugs and treatment;

* calling new signs or symptoms to the attention of the physician and arranging for medical attention when the patient's condition appears to warrant it;

* instituting life-saving measures in the absence of a physician; and

* assisting the patient and his family to identify resources which will be helpful in maintaining him in the best possible state of health.

The Certified Nurse-Midwife

The term "midwife" conjures up visions of old-time "granny midwives" who set about their duties of delivering babies with their own methods and no formal training. At one time, Florida had more than 2,000 such midwives. Since 1933, they have been supervised by nursing consultants from the Division of Health. Only 85 lay midwives were licensed to practice in 1972.

The certified nurse-midwife is far different from the "granny midwives" of the past. The nurse-midwife is a registered nurse whose added knowledge and skills have been obtained through an organized program of study and clinical experience. She has extended the limits of her practice into the management and care of mothers and their babies throughout the maternity cycle - as long as the progress of the mother meets the criteria accepted as normal.

Due to the rising Florida population and proportionately small numbers of obstetricians, the nurse-midwife can fill an



MIDWIFERY - The certified nurse-midwife is far different than the "granny midwives" and the Sarah Gamps of old. Today's nurse-midwife has added knowledge and skills learned through an organized program of study and clinical experience.

increasing need for maternity care in the state. There are three located at present in county health departments providing prenatal and postpartum care, including family planning services. Two more nurse-midwives are employed in a hospital in one Florida city. These will not only deliver the babies at the hospital but also supervise the prenatal and postpartum patients in the county health departments.

Mothers who have gone through the experience of being cared for by a nurse-midwife are enthusiastic about the experience.

Ruby, who was having her first infant, was assigned to Mrs. Wright, a nurse-midwife, early in her pregnancy. She had been examined by an obstetrician and everything indicated that it would be a normal term and delivery.

Mrs. Wright was especially trained to provide complete maternity care from the early pregnancy to delivery - as long as the mother's progress was normal. Mrs. Wright was not a totally independent practitioner. Should complications occur during Ruby's pregnancy, Mrs. Wright would immediately refer Ruby to the care of the obstetrician and he would take over the care of the mother.

Mrs. Wright examined Ruby at regular intervals during the pregnancy, supervised her diet, watched her weight, and the development of the fetus. During the pregnancy, Ruby and Mrs. Wright developed a personal rapport. The nurse-midwife was with Ruby during the labor period. She gave continuous physical and emotional support, evaluated the progress and delivered the baby. Afterwards she took immediate care of the infant. She instructed the new mother on how to care for her newborn infant before Ruby left the hospital.

Several weeks after the birth, Mrs. Rogers, a public health nurse from the county health department, visited Ruby's home to see how she and the baby were getting along and to offer advice on caring for the infant. She helped the mother adjust the home situation to the new child, answered the questions

Ruby had, and helped lay the foundation for future pregnancies by advising Ruby on ways of planning her family.

The Pediatric Nurse Practitioner

The public health nurse is one of the primary deliverers of health care in pediatrics. During the initial visit, the nurse obtains from the parents, the child's health history and other pertinent information.

Returning well-child clinic visits are conducted by the public health nurse upon referral by the pediatrician. The nurse makes a physical and developmental evaluation of the child and counsels the parents on child care, accident prevention, nutrition, and other factors involving the health of the child.

In addition, the nurse handles telephoned questions from the parents about the child's habits and/or normal growth problems. She makes many professional judgments involving the child's health care. Should there be complications in the growth pattern or a disease, the pediatric nurse practitioner refers the child back to the pediatrician.

The Family Planning Nurse Specialist

The family planning nurse specialist is trained to give normal family planning clinic services. During 1972, over 100,000 women of the 261,377 potential users of family planning services in Florida took advantage of the services of the county health departments. This does not include those cared for by private physicians. Some county health departments have a service in which physicians and nurse specialists carry out the examinations and provide methods of family planning. In some counties, the service is provided by physicians on a fee-for-service basis.

A 12-week special course for family planning nurse specialists was inaugurated in Jacksonville at University Hospital in mid-1973. The students, who were experienced public health and maternity nurses, were taught the whole spectrum of family planning, including: The theory of population control and contracep-



FAMILY PLANNING CLASS - A family planning nurse specialist, during a course in Jacksonville, learns how to insert intrauterine devices in a mannikin.

tives, recognition of symptoms and complications arising from birth control methods, insertion and removal of intrauterine devices, prescribing of birth control pills or other methods of family planning. In addition to classroom lectures, the nurse specialists were given extensive, practical clinical experience.

Back in the county health department, the family planning nurse specialist is able to operate a family planning clinic under guidelines agreed upon by the responsible nursing and medical directors.

Mrs. Gaines was making her first visit to a family planning clinic. During her initial visit, her medical history was taken. She was weighed and her blood pressure was taken. Then she was given a urine analysis, blood serology for syphilis, blood sugar and other tests. During the examination, Mrs. Cross, the family planning nurse specialist, gave Mrs. Gaines a breast examination, palpated her abdomen, performed a Pap smear, gonorrhea culture, and vaginal and rectal examination. During the examination, Mrs. Cross carried on a little educational program, telling Mrs. Gaines about the examination and why it was done, about the instruments and how the young woman could examine herself for possible breast cancer. The nurse specialist has discovered that nearly all women are more relaxed with her than with a physician.

Following the examination, Mrs. Cross discussed with Mrs. Gaines the type of birth control that would be used. Mrs. Gaines' medical history, blood pressure and menstrual periods were taken into consideration. Because Mrs. Gaines was given birth control pills, she was asked to return in three months to obtain a new supply and for the nurse specialist to check her reaction to the pills. If an intrauterine device had been inserted, Mrs. Gaines would have been asked to return in a month for a checkup. If there were no difficulties, she would have been able to make the visits annually. If complications arose, more frequent visits would have been necessary.



CONTRACEPTIVES - A family planning nurse specialist discusses the various kinds of birth control pills with a patient (right) and shows her one kind of intrauterine device (opposite page) that could be inserted.



At no time is the family planning nurse specialist working independently from a physician. Although a doctor may not be physically present in the clinic, the nurse specialist has one available whom she can call if there is a problem with a patient.

The Comprehensive Health Team

Currently there is a need for delivery of comprehensive, all encompassing, quality care to patients in the county health departments. There is a trend to use the health team concept, which consists of a physician, the nurse-specialist, the public health nurse, the social worker, and as auxiliary members, the nutritionist, the health educator, and the physical therapist.

The team concept was developed to assist health professionals to identify their specific functions and share responsibilities as they relate to the needs of the patient and his family.

Each of the disciplines have their responsibilities in giving comprehensive health care. The team accepts the patient and his family for health care and each member obtains information on the patient related to his particular area. This information is pooled. The professionals are involved with:

* comprehensive evaluations of the patient;
* diagnosis and evaluations of the patient and his family's ability to accept and cope with the diagnosis;
* treatment and assessment of the patient and his family's ability to understand and carry out treatment;
* identifying the nutritional, vocational, educational, spiritual and recreational needs of the patient and his family;
* continuity of care and the ability to understand and accept such care; and
* rehabilitation of the patient and his family, if needed.

The public health nurse specialist, as part of the comprehensive health team, also,

* interprets the clinical procedure to the patient and his family;
* assesses patient-family strength and weaknesses in coping with past health problems, as well as the current situation;
* ascertains possible problems in nursing care and management of the patient;
* determines concurrent health needs of the family and patient, their relationships and inter-action, and their knowledge of health resources and past use of such resources;
* establishes nursing needs of patient and family relative to the present problems;

* sets priorities, and plans and provides nursing care as indicated;

* revises and expands nursing care as necessary;

* gives specific instruction on carrying out treatment; demonstrates and/or supervises treatment procedures and gives support for carrying out treatment;

* intervenes in times of crisis;

* coordinates treatment with appropriate health agencies and refers patients to such agencies if needed;

* assesses patient-family acceptance and understanding of continual care and plans with family for transfer of patient to the home or nursing home;

* assists the family to adopt to changing patterns in health care; and

* assumes responsibility for surveillance until care is completed.

The **physician**, as a member of the comprehensive health team, also

* carries out the physical examination;

* diagnoses and interprets diagnosis to the patient and his family;

* plans and carries out treatment (if part of the county health department procedure);

* recommends necessary medical and nursing care continuity;

* interprets and plans with family for necessary medical care and supervision;

* contacts appropriate physicians for specialized care, if needed, and provides them with medical information; and

* assures continued medical care until patient is well.

The **social worker,** as a member of the comprehensive health team, also

* discusses with the family and patient the special program and resources for care;
* carries out social assessments for structure and functions of family and patient relationships;
* evaluates economic and environmental factors affecting the patient and family;
* recognizes cultural factors that may affect recovery of the patient;
* assists family to use medical care to maximum;
* assists with financial plans to carry out treatment;
* coordinates activities with other social agencies working with family and refers patient to appropriate resources;
* plans and prepares family for referrals concerning long-term social-emotional, financial, occupational and educational problems; and
* helps family cope with demands brought about by the current circumstances.

Auxiliary Members of the Health Team

In addition to the public health nurse, physician and social worker who are involved with the recovery of the patient, there are the nutritionist, the health educator and the physical therapist.

The nutritionist works in the county health department with the patient and his family. She evaluates the eating habits of the patient and cultural and economical factors affecting the family diet. She considers the patient's food preferences. Then she suggests ways the patient can adapt the special diet needed for his recovery to his eating patterns. She will also recommend

foods of the right kind in proper amounts that will fit into the diet.

The health educator, when part of the county health department staff, works with individuals and community groups to stimulate people to recognize health problems of which they may not be aware and to work for their solutions. Group classes and individual conferences are arranged with the nutritionist, public health nurse and/or physician. When patients are gathered in the waiting room, the health educator may present a program of slides or a demonstration on health.

The physical therapist, who works under contract with various agencies providing home nursing care, gives the patient an exercise program prescribed by the physician. This is to help to restore body functions through exercise, massage, heat, water, light or electricity.

The Home Health Aide

The home health aide who goes into the home of a sick patient is an "extension" of the public health nurse. Twenty-two county health departments and other home health service agencies in Florida, including five Visiting Nurse Associations, have these "arm extenders."

One public health nurse, who was giving daily insulin injections to a blind, diabetic patient who lived alone, felt frustrated because the patient would not eat foods necessary to counteract the insulin. The patient was always burning her food because she was blind, and like most people, refused to eat burned food. A home health aide was brought in once a day to prepare a meal. In this way the patient was able to stay in her home for nearly three years.

The home health aide carries on a program of care after the public health nurse leaves the home. Many old people who live alone may only need a bath, a meal, or simple personal care. But the home health aide fills more than a particular need. The fact that someone is coming to attend to their needs,

and give support and care, often boosts the spirits of the sick and elderly.

The home health aide may give a bath, prepare a specific diet, give attention to bladder and/or bowel functions, transfer the patient from bed to a chair and back again, follow through on an exercise program set up by a physical therapist or assist the patient through a clinic visit. All of the care is given under a physician's orders. Although the home health aide may work independently in her day-to-day operation, she is under the supervision of the public health nurse.

The patient and home situation are evaluated by the attending physician and public health nurse before the home health aide is sent into the home. The public health nurse goes with the aide on the first visit to instruct her on what she is to do in the specific home. In return, the home health aide is often able to provide information that may help the public health nurse and physician with the treatment of the patient. The aide is usually in the home for two to three hours and may serve three persons in a day. The public health nurse revisits the





CARE IN THE HOME - Under the supervision of public health nurses, a home health aide gives a patient a bed bath (opposite page). Another aide (right) assists with a range of motion exercise on another patient.

home periodically to supervise the work of the home health aide.

Home health aides go through a training course of some 60 hours which includes, first aid, growth and development, family relationship, body mechanics, cooking, psychology and other information about caring for the elderly. In addition, they go through refresher courses and sometimes sit in on clinical instruction for the nurses. During these sessions, voluntary and other governmental agencies inform the aides of their services to the patients.

A Necessity for Expansion

Florida's growing population and the increasing cost of health care requires more personnel to care for the sick and maintain the health of those who are well.

The more than 1,000 public health nurses in Florida's public health system are filling some of these needs. A re-examination and re-defining of their services show that they can do much to assist over-worked physicians in providing better care for the apparently healthy and for those people with minor illnesses. This care would be given under guidelines agreed upon by the nursing and medical professions. People would be served by the nurse specialist until there is a deviation from the normal health patterns. Then they would be referred to the doctors for indicated diagnosis and treatment.

The nursing specialists - nurse-midwife, family planning nurse, the pediatric nurse and family nurse practitioners - are examples of changing concepts and patterns in public health nursing. They are part of the public health nursing's future picture in Florida.



MAKING HOME VISIT - A public health nurse, who is a certified nurse-midwife, leaves a health center to visit the homes of her patients.